

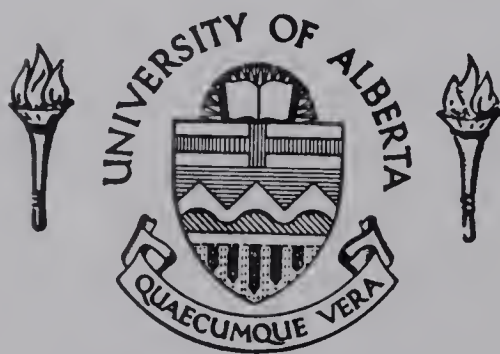
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SOME ASPECTS OF REINDEER NOMADISM
AND NOMAD SETTLEMENT IN
FINNMARK, NORWAY

by

GEOFFREY HORN FARMER

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
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FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled Some Aspects of Reindeer Nomadism and Nomad Settlement in Finnmark, Norway, submitted by Geoffrey Horn Farmer in partial fulfilment of the requirements for the degree of Master of Arts.

ABSTRACT

The nomadic reindeer economy of the Mountain Lapps which developed on the interior plateau region of Finnmark province in North Norway was an outgrowth of an earlier hunting-fishing economy. The adoption of reindeer nomadism by the Lapps was, in part at least, a response to the decline in numbers of their principal food source, the wild reindeer, which followed the expansion of Norwegian settlement into Finnmark.

This study concerns the emergence of the subsistence reindeer economy of the Lapps and the transition toward the end of the nineteenth century, to a cash-oriented economy based upon the sale of meat and hides. The study further attempts to show that the nomads, after reaching a peak of nomadic development between 1750 and 1850, progressively relinquished their nomadic existence for a greater and greater degree of permanency of settlement. In so doing the traditionally close herd-family relationship was weakened.

In view of the relative ease with which the nomads, during the periods of migration, were enabled to move between the winter and summer grazing territories, the extension of roads into the areas of reindeer herding is viewed as being instrumental in encouraging

the nomads to establish permanent settlements near their winter grazing areas. The over-all tendency was for the families to abandon their spring, autumn and ultimately, summer camps. The winter camps thus became the sites for year-round occupancy since the greatest amount of work with the herds took place during the winter half-year.

Influential in determining the location of a nomad's house were such factors as: (1) distance to the herd's winter grazing, (2) the direction of the migration route, and (3) proximity of a settlement.

The community of Masi was chosen as a case study of the evolution of the settlement and economy of a Mountain Lapp centre in interior Finnmark. Masi exemplifies the character of a typical Lappish community.

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INTRODUCTION

Nature of the Study

The tradition of research on Lappish subjects is one of long-standing and the bibliography of Lappology, the term coined by the eminent Swedish philologist, Karl Bernhard Wiklund, is a rich one indeed. Much of the work on Lappish subjects has been done by Scandinavian scholars and includes research devoted to Lapp archaeology, ethnography, folklore, anthropology and philology. It is the latter which attracted early research and, as interest grew, led investigators to examine other aspects of Lapp culture. In time the whole spectrum of Lapp culture became a focus for systematic study and developed sufficiently to warrant the founding of separate Lapp departments in Scandinavian museums.

The problems of the Lappish minorities within the borders of Norway, Sweden and Finland have come very much to the forefront of Lappish studies in recent years. While there has been no intention of "preserving" the Lapps as museum curiosities, attention has been directed toward stimulating the Lapps' consciousness of their own heritage and of interpreting their culture to the non-Lapp population of Fennoscandia.

Geographical studies of the Lapps per se are few, ethnography having commanded more attention. On the other hand, in an anthropological study of the nomads it is probably difficult to separate entirely the matters of geography from anthropology and vice versa.

In the present study, "Some Aspects of Reindeer Nomadism and Nomad Settlement in Finnmark, Norway," particular attention has been focused upon the transition from semi-nomadism to transhumance and permanent settlement which characterized the long period between the emergence of reindeer nomadism on Finnmarksvidda and the present day. The study is broad in scope and general rather than specific. Frequent reference, however, is made to conditions that pertain to Kautokeino and the broad region extending westward to the Finnmark coast. Within this region the settlement of Masi and the immediately surrounding region have been treated separately whenever it has been possible to gather pertinent written material. Conversely, while referring to Masi, it has frequently been necessary to assume that activities that characterized the Kautokeino nomads, for which there is documented evidence, applied to the Masi Lapps too. Such an assumption would be open to question if it was applied to widely separated regions, but such is not

the case. The nomads from Kautokeino and Masi traditionally have mingled and shared the same grazing territories. It seems reasonable to suppose, therefore, that unless one is dealing with isolated cases, the behaviour of nomads from both centres would be essentially the same.

Objectives and Methods

True nomadism or "maintenance-in-common" as Myres¹ terms it, precludes the use of permanently fixed dwellings, and instead, a reliance is placed upon some form of movable shelter or tent for protection from the elements. A type of tent is the possession of most, if not all, nomadic peoples. Degrees of settlement and nomadism are not entirely incompatible, however, providing a means is found to "maintain" the herded animal while remaining dependent upon it. This study deals in broad terms with reindeer nomadism; it also focuses attention on the abandonment of semi-nomadism in favour of settlement and transhumance.

Part One of the thesis is wholly devoted to Finnmark province and an elucidation of linguistic and ecological differences within the Lapp world.

¹ J. L. Myres, "Nomadism," Journal of the Royal Anthropological Institute of Great Britain and Ireland, Vol.71, 1941, p.20.

Part Two outlines briefly theories pertaining to the origin of the Lapps and reindeer domestication in Scandinavia and discusses the emergence of reindeer nomadism in Finnmark, the expansion of herds and the appearance of Mountain Lapp settlements on Finnmarksvidda. Included in Part Two is an examination of the nomadic reindeer economy from the period of the mid-eighteenth century up to recent times. Special attention is paid to changes in the method of herding and its geographical implications, the growth and distribution of herds in Finnmark, areas of predominantly Lappish population and factors and consequences of permanent settlement.

Part Three deals exclusively with Masi, a Mountain Lapp community in interior Finnmark mid-way between Alta and Kautokeino, and with the surrounding region. The inclusion of Masi is intended to illustrate some of the aspects of the transition from semi-nomadism to transhumance discussed in the previous chapters. However, it has been possible to be more precise in dealing with the Masi region because of the existence of written information pertaining specifically to it and Kautokeino.

Procedures

In the preparation of Parts One and Two information was obtained largely by library research. Efforts to gather additional infor-

mation by means of letters sent to authorities in Norway were not satisfactory, partly because the answers to the questions entailed considerable intensive research. Ideally, a second visit to Norway would have been desirable, but this was not possible.

The fieldwork for the study of Masi was undertaken during the summer of 1965. In preparation for the actual fieldwork, five weeks were spent in residence at the Tromsø Museum where Ørnulf Vorren, the Norwegian Lapp ethnographer, is curator and head of the Lapp Ethnography Department. Later, attendance at the Fifth Nordic Lapp Conference held in Bonakas, Tana, provided an opportunity to meet numerous Lapp figures, several of whom were helpful in furthering the study.

A month was spent in Masi with a nomad family and a week on the summer range near Kåfjord. Several days were also spent at Karasjok, Alta and Kautokeino and on the Vidda.

Masi was chosen as the focus of study for a number of reasons: it was regarded by people familiar with the Lapps as a typical Mountain Lapp village, meaning that, with several exceptions, all the inhabitants were Lapps; the community still retained the Lappish elements of language, dress and social custom; reindeer herding was a principal economic activity and up to that time Masi had maintained its Lappish character.

THE FINNMARK LAPPS

PART ONE

FINNMARK AND THE FINNMARK LAPPS

CHAPTER I

FINNMARK: PROVINCIAL GEOGRAPHY

Finnmark, the northernmost and largest of the twenty provinces (fylker) of Norway, occupies fifteen per cent of the total land area of Norway. At latitude $71^{\circ}11'N$., Cape Knivskjell, the northern extremity of Finnmark (and Norway proper), coincides approximately with the latitude of Boothia Peninsula ($73^{\circ}30'N$.), the most northerly extention of mainland Canada. To the east, the small island of Vardø, lying on the same meridian as Cairo, Egypt, marks the eastern limit of Finnmark. The southern boundary of Finnmark in the west conforms to the height of land separating Kvaenangen and Altafjord, continuing irregularly in a southerly direction to the Finnish border. Finnmark shares a common border principally with Finland, but a short stretch of the border in the extreme northeast of the province--conforming to the course of the Pasvik River--divides Finnmark (and Norway) from the Soviet Union. Together with the northern provinces of Troms and Nordland, Finnmark comprises the region of North Norway, commonly regarded as lying to the north of latitude $65^{\circ}N$. (Figure 1).

The total land area of Finnmark is 18,782 square miles. It

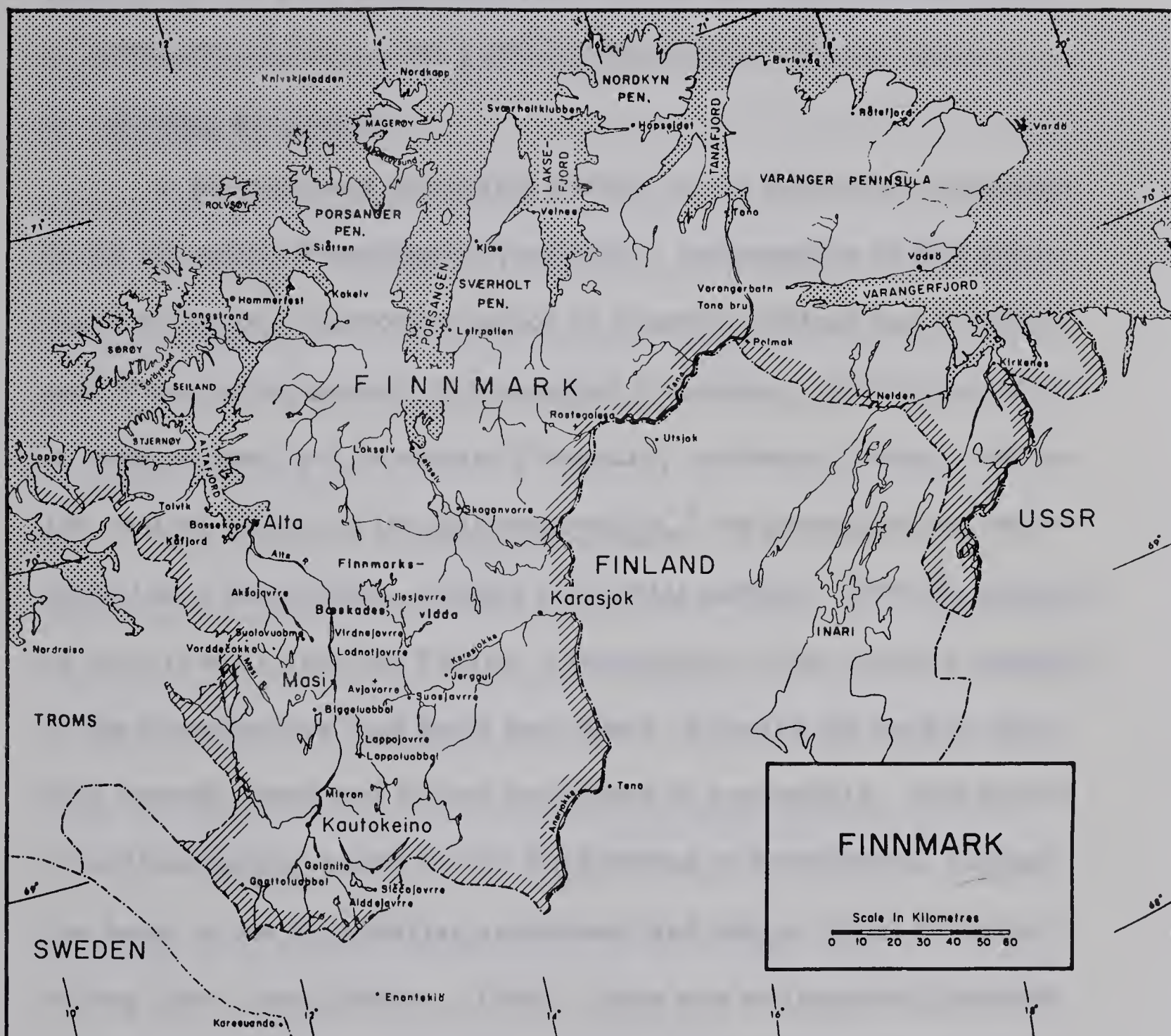


Figure 1

is therefore somewhat smaller than the Provinces of Nova Scotia (21,000 sq. mi.) but larger than, for example, the European countries of Denmark (16,619 sq. mi.) and Switzerland (15, 941 sq. mi.).

1. Geology and Relief

A predominant structural feature of the Norwegian landscape is the so-called Precambrian peneplain. Deformation of this peneplain during the Caledonian period of mountain folding was a significant event in the genesis of Norwegian mountains. Folding occurred in many places, but in eastern Finnmark, southeast Norway, and on the central plateau of the Hardangervidda,¹ the peneplain was resurrected as a discernible, roughly horizontal plateau. With the passage of time to the Cambrian Period, submergence of the western margins of the Scandinavian land mass took place, allowing the seas to inundate certain areas and eroded sediments to accumulate. The period of sedimentation, known as the Eocambrian in Scandinavia, formed the basis of the Eocambrian sandstones and shales which developed during later consolidation. Today, these are an important element in the rocks of northernmost Norway. In the subsequent course of the Cambrian Period, the marginal land mass sank sufficiently to form the sea floor and once again became layered with sediments,

¹Vidda or Vidde is the suffix denoting a high mountain plateau. The Hardangervidda is located in the south-central part of Norway.

including clays, sands, and ultimately limestones from corals and crustacea. The foregoing geological events culminated in the formation of the Caledonian geosynclinal sea. Later, during the Silurian Period, the geosynclinal sea was compressed (initiating the Caledonian mountain folding) in massive folds to form the Caledonian mountain system. Only the lowermost parts of the Caledonian system are visible now, the original surface having been eroded. However, subsequent emergence of the land has maintained the former mountain features.

On the basis of geology and morphology, Finnmark can be divided approximately into two halves; West Finnmark, characterized by fjords and islands and dominated topographically by the Caledonian mountain chain which, however, never exceeds the 6,000 feet elevation; and interior Finnmark, a plateau (Finnmarksvidda) approximately 1,000-1,650 feet in elevation which falls gently from the watershed and ends in abrupt cliffs facing the Norwegian Sea.

The dramatic outlines of coastal south Norway continue with modification along coastal Finnmark. In general, the characteristic features of Norway are on a grander scale in the south: the fjords are long and deep in the south, whereas they are broad and shallow in Finnmark; southern rivers frequently have steep gradients, rapids and waterfalls; Arctic rivers, by comparison, have gentle gradients,

only occasional rapids and no important waterfalls,

In contrast to the small islands of south Norway, some of the largest islands in Scandinavia rise sharply out of the Arctic Sea off the coast of Finnmark; such islands as Sørøy (315 sq. mi.); Seiland (216 sq. mi.), Kvaløy (127 sq. mi.) and Magerøy (106 sq. mi.).

Beginning north of the city of Stavanger a belt of skerries--the skjaergard--arches northwards and terminates with the island of Magerøy in Finnmark. An inland passage called the "Inner Lead" in the lee of the skjaergard affords coastal shipping with a protected seaway. Associated with the skjaergard is a typical feature of North Norway, the strandflat, a rock terrace which fringes many of the islands (best exemplified in the Lofoten Islands) and the adjoining mainland. For centuries the strandflat has been a valuable site for settlement. Eastward of the island of Magerøy the skjaergard and strandflat terminate. The strandflat is submerged along West Finnmark and the Eocambrian sandstones and shales of East Finnmark* give rise to a different coast type, the so-called naeringer, or abrupt, steep cliffs. Eastward of the Caledonian mountain system in what can be called interior Finnmark, the dominant landform is the Vidda or Finnmark

* East Finnmark may be considered as lying to the east of a line drawn from the promontory, Svaerhaltklubben, southward to the Finnish border.

plateau. The average elevation of the plateau is 900 feet. Relief is gentle, consisting of undulating hills covered by lichens, mosses and dwarf birch. The monotony of the landscape is broken by numerous summits, the highest being Rastegaisa at an elevation of 3,543 feet.

2. Climate

The sea and the warming influence of the North Atlantic Drift ameliorate the climate of coastal North Norway. Inland, the influence of the sea recedes rapidly, however, and the moderate climate of the coastal fringe gives way to the extremes of the mountains and the interior. In keeping with its northern location, Finnmark has a drier and colder climate than the rest of Norway. But similar to the country as a whole, maritime influences prevail along the coastal fringe of West and East Finnmark giving rise to marked contrasts with the continentality of the interior of Finnmark (Figures 2 and 3). Pronounced extremes in temperature have been recorded on Finnmarksvidda. For example, the highest reliably measured temperature in North Norway, 94.5° F., was recorded

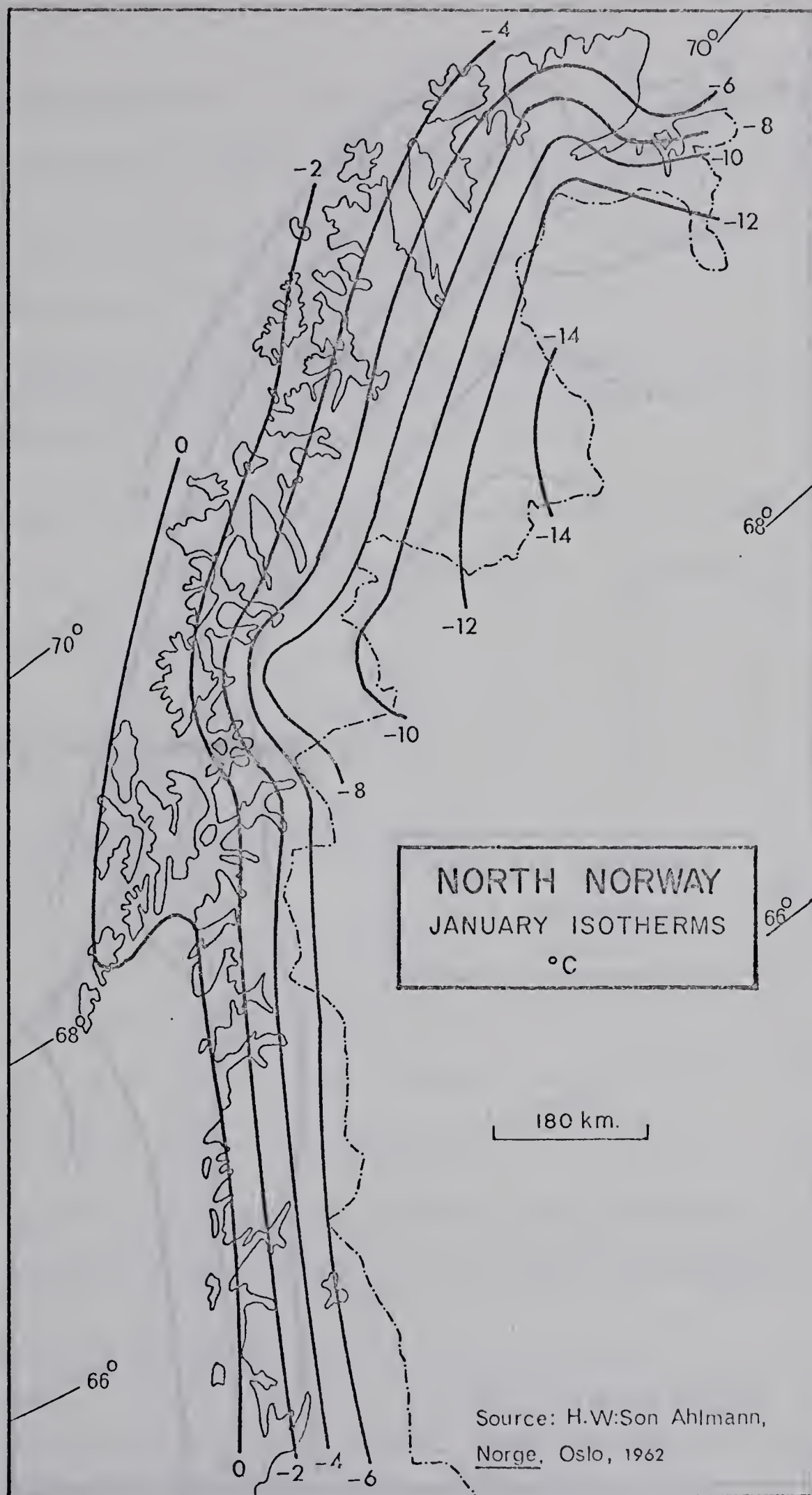


Figure 2

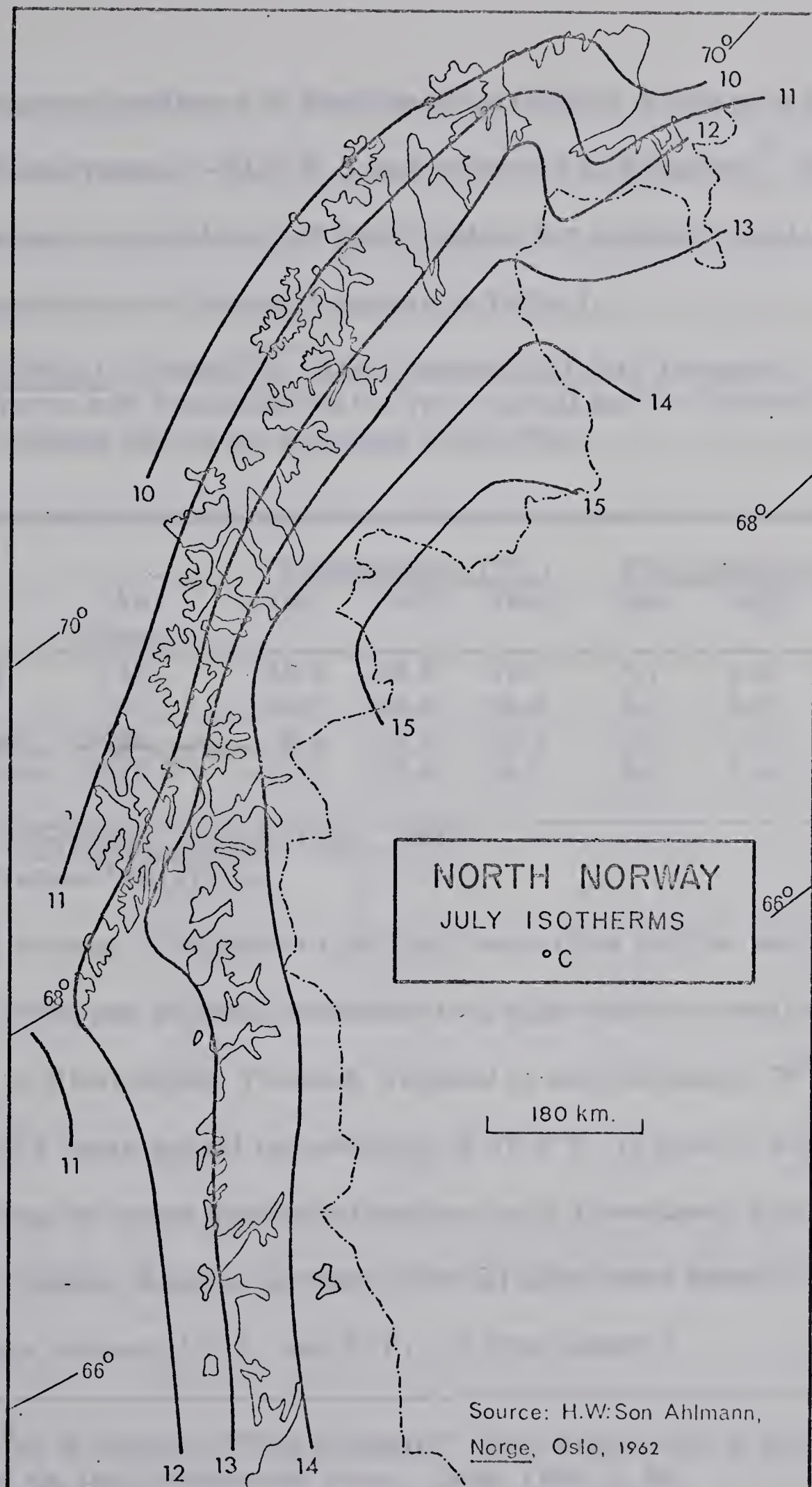


Figure 3

at Siččajavrre southeast of Kautokeino in interior Finnmark; the lowest temperature, -59.8°F. , was recorded at Karasjok.² The mean annual temperature and precipitation for selected coastal and interior stations in Finnmark appear in Table I.

Table I--Finnmark: Mean January and July Temperatures and Precipitation for two Coastal and two Interior Stations (based on averages 1931-1960).

Station	Alt. (feet)	Temperature ($^{\circ}\text{F.}$)			Precipitation (in.)		
		Jan.	July	Year	Jan.	July	Year
Tromsø	148	25.7	54.3	37.2	3.7	2.2	38.8
Vardø	33	24.3	48.4	34.9	1.7	1.6	21.2
Karasjok	420	5.4	57.0	29.3	0.6	2.2	13.3
*Kautokeino	1010	7.2	55.4	36.7	0.3	2.4	12.0

Source: Statistisk Aarbok, Oslo, 1965.

*Mean Values 1901-1930.

Coastal Norway is exposed to cyclonic westerlies and the warm air masses from the Atlantic contribute to a high winter thermal anomaly. By way of illustration, Tromsø, situated at approximately 70°N. latitude, has a mean annual temperature of 37.2°F. (Table I), while stations along the same parallel elsewhere (mid-Greenland, Arctic coastal Canada, Alaska, northern Siberia) have mean annual values that range between 14°F. and 5°F. , or even lower.³

²S. W. Hansen, "The Climate," in Ø. Vorren (ed.), Norway North of 65, Oslo University Press, Oslo, 1960, p. 40.

³Loc. cit.

The highland barrier, which in Norway rises steeply from the west coast, effects the change from oceanic to continental conditions within several miles. Accordingly, coastal Finnmark, and particularly West Finnmark, is characterized climatically by oceanic conditions, that is, damp, mild winters and cool, moderate summers. Interior Finnmark, on the other hand, experiences considerably colder winters and warmer summers, with lower precipitation totals. The climatic differences between the northwestern coastal districts and the northeastern districts are broadly summarized in Table II.

Table II--Climatic Differences between Northwestern Coastal Districts and Northeastern Districts of Norway.

Region	Range of Annual Pre- cipitation (inches)	Range of Mean An- nual Tem- perature (°F)	Range of Mean Temp. of Coldest Month (°F)	Range of Mean Temp. of Warmest Month (°F)
Northwestern Coastal Districts	12-41	33-41	17-32	45-54
Northeastern Districts	14-26	27-33	4-22	48-55

Source: M. Y. Nuttonsen, Ecological Crop Geography and its Agroclimatic Analogues in North America, International Agroclimatology Series, No. 12, 1950, p. 12.

It can be seen from Table II that the mean annual temperature and the mean temperature of the coldest month are higher along the coastal fringe than in the interior; the maximum mean temperature

is only slightly higher in the eastern or interior region than in the western coastal districts. Generally the winters in Norway become progressively colder as one proceeds northward, the moderating influence of the North Atlantic Drift, however, becoming more pronounced once the Arctic Circle is reached.

Rainfall in all localities of Norway is plentiful. The Arab geographer, Edrisi, described Norway as the land of "frequent rain and continuous wet," which shows that its reputation in this respect was well-established by medieval times. As one might expect, the prevailing westerly to southwesterly winds are responsible for the heavier precipitation along the western coastal districts of Norway (see Table II); strong cyclonic activity along the western margins during the winter months accounts for the greatest proportion falling at that season. The degree of access of the moisture-bearing winds, elevation, exposure and general relief determine the local amount of precipitation, however.

While Finnmark may be regarded as conforming to this general pattern of precipitation distribution, the mean annual precipitation throughout Finnmark is less than for any other part of the country. This complies with the general scheme of larger annual precipitation totals in southern parts of the country, decreasing northward with in-

creasing latitude.⁴ Along the coast totals range from sixteen to thirty-one inches, with less than sixteen inches falling in the interior.⁵

Precipitation totals of this order might elsewhere be insufficient for agriculture but in view of the moderate evaporation, due to comparatively low air temperatures, there is scarcely any area which suffers from want of rain. This condition is not entirely true during abnormal years, however. Sustained dry spells (interior Finnmark), coming as they may during the growing season, or extended wet periods (coastal Finnmark) are frequently decisive to crops since the short summer at these latitudes allows little chance for plant recovery. Variability of weather might therefore be considered of more direct concern to agriculture, for prolonged variations from the norm in summer may spell failure for the small farms of Finnmark balanced as they are at the edge of cultivation in Europe.⁶

⁴This generalization cannot be rigidly applied, however, since the local conditions of relief, elevation, and exposure to rain-bearing winds will determine individual totals.

⁵Hansen, op. cit., p. 45.

⁶Wheat is seldom grown north of the Trondheim Depression (ca. 65° N. Lat.). Oats are grown as far north as Tromsø (69° 05' N. Lat.) and barley may be grown in favourable coast localities as far north as Tana Experimental Station (70° 05' N. Lat.). Generally speaking, however, cereals are cultivated only on a modest scale north of Vestfjorden. Potatoes are grown successfully in all inhabited parts of the country.

The weather and climate of Scandinavia are strongly influenced by two conditions of atmospheric circulation: a cyclonic movement from the Atlantic bringing predominantly westerly and southwesterly winds to the Scandinavian peninsula, and a circulation in which the usual westerly flow is blocked by upper air ridges and the flow of air, instead, becomes meridional. Climatic fluctuations from one period to another which give rise to the "abnormal" conditions are explained in terms of the circulation type dominant at the time. Under the first named situation, winter weather in Norway is conditioned by mild polar air which brings high temperature anomalies and heavy precipitation along the coast. In summer, the westerly flow of air from the North Atlantic provides cool summers and generally abundant rainfall along the coast. In respect of the second situation, the presence of a blocking high pressure ridge in winter causes an easterly or northeasterly flow of Polar Continental air or Arctic air. Temperatures under this condition are low and precipitation in the form of snow is often continuous for many days in interior Finnmark. Summer weather depends very much upon the position of the ridge itself. For areas in the centre of the ridge, prevailing weather conditions are normally clear, dry and hot; while to the east of the ridge, northwesterly winds bring frequent showers. To the west, cyclonic activity produces heavy precipitation, but because the flow of

air is southerly, the weather is warm.⁷

The effect of a high latitude location upon the length of day and season is very pronounced in Finnmark (Figure 4). In winter the hours of sunshine are notably few; conversely, in summer, the hours of sunshine are very long. In part this compensates for the high degree of cloudiness which commonly occurs along the west coast.

3. Vegetation

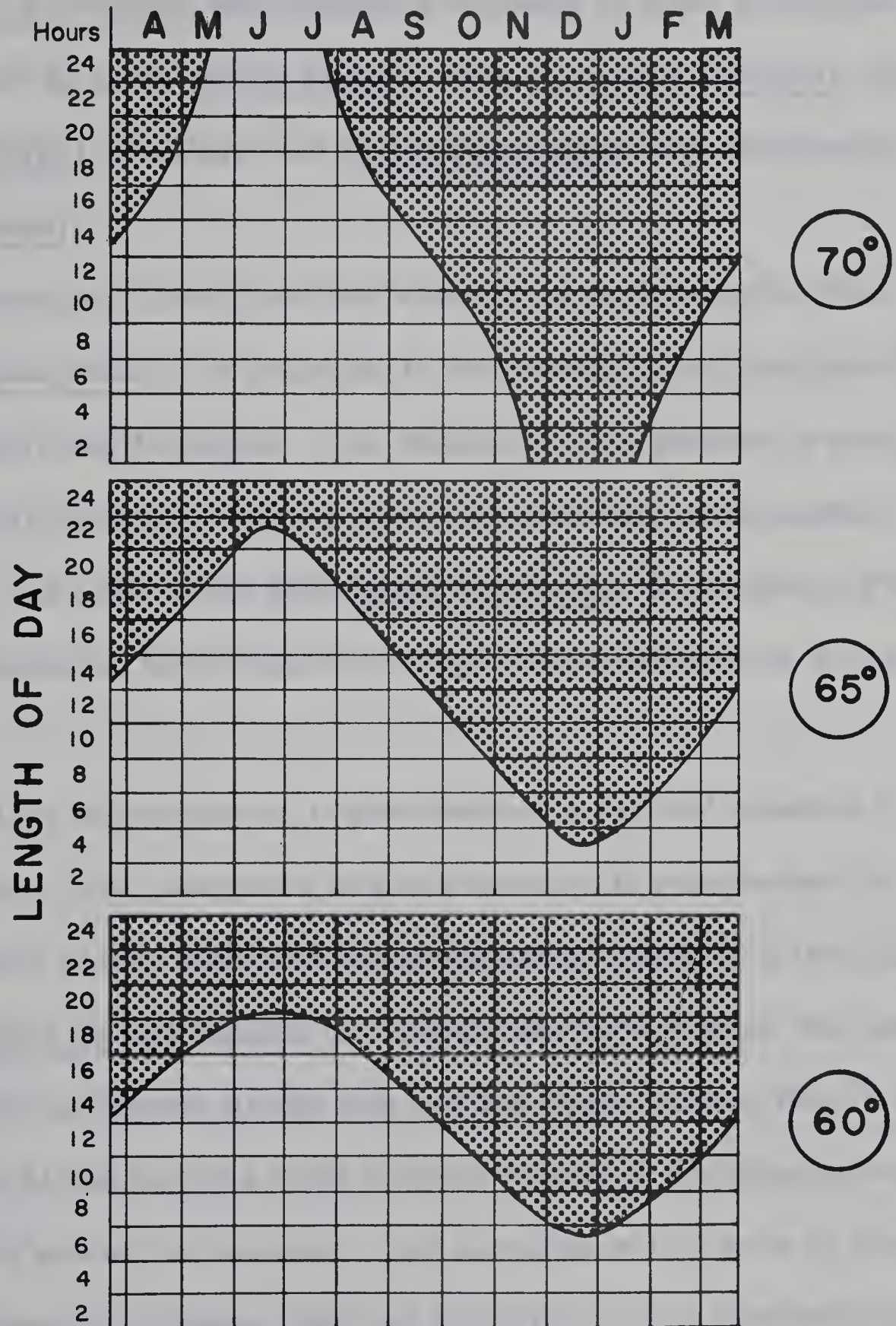
The vegetation of Finnmark is subarctic in type. The most common tree is the birch (Betula tortuosa) which is replaced by the stunted birch (Betula nana) on the outlying islands and in the upper reaches of the mountains. At approximately 70° N. latitude the birch wood zone approaches sea level, rapidly diminishing northward to give place to the arctic tundra. On the Vidda the birch forms low sparse forests spread over wide areas. According to Hustich, such birch wood forests may partly be the result of forest fires and former cutting along the forest limit in northern Europe, but particular climatic conditions have doubtless exerted an influence as well.⁸

⁷C. C. Wallen, "Climate," A Geography of Norden, Oslo, 1960, p. 46.

⁸I. Hustich, "Plant Geographical Regions," in A. Sømme (ed.), A Geography of Norden, Oslo, 1960, p. 57.

SCANDINAVIA

THE ANNUAL RHYTHM OF DAYLIGHT AND DARKNESS AT DIFFERENT LATITUDES



Source: After W. R. Mead, An Economic Geography of the Scandinavian States and Finland, London, 1958

Figure 4

Birch forms the predominant species in the Sub-Alpine Region (Regio sub-alpina) but included are stands of other sub-alpine species such as alder (Alnus incana), aspen (Populus tremula), species of willow (Salix), Mountain ash (Sorbus aucuparia) and birdcherry (Prunus padus).

Coniferous forests are not widespread in Finnmark. The spruce (Picea abies), for example, is found only in the districts of Sør-Varanger and Karasjok. The reasons for the absence of spruce are not clear, however, since it grows successfully when planted. Similarly, the limit of the pine (Pinus silvestris) is reached in Finnmark but stands of forest size occur only in the districts of Alta and Karasjok.

Within the sub-arctic region there is a vertical zonation of plant growth. The lowermost belt in Finnmark is represented by the Birch Region which, with increasing elevation, yields to a true Alpine Region (Regio alpina) capable of division into three zones: the Lower Alpine Belt, the Middle Alpine Belt and the Higher Alpine Belt.⁹ In the Middle Alpine Belt the most striking feature is the disappearance of the birch and willow species. The elevation of this zone in Finnmark is normally between 2,400 and 3,000 feet and is somewhat lower

⁹Broadly speaking the zone of the Mountain Lapp and reindeer nomadism begins above the tree-line.

than in the rest of the country. Once the upper levels of the Higher Alpine Belt (Regio alpina superior) are reached (3,300-3,900 feet), continuous plant cover ceases and species are represented by only single specimens.¹⁰ Beyond this level are to be found only mosses and lichens.¹¹

Fens and bogs cover widely scattered areas of Finnmark.¹² Often associated with bogs are cloudberries (Rubus chamaemorus), or moltebaerer in Norwegian, the fruit of which provide a source of cash for the Lapps.¹³ Both bogs and fens are the breeding areas for the swarms of mosquitoes which infest the tundra during the summer months. Two insects particularly troublesome to the reindeer are the hide gadfly (Oedemagena tarandi) and the nose gadfly (Cephenomyia trompe).

¹⁰ O. I. Rønning, "The Vegetation and Flora North of the Arctic Circle," in Ø. Vorren (ed.), Norway North of 65, Oslo, 1960, pp. 50-72.

¹¹ The reindeer feed upon a number of species of lichen found on the Vidda. In winter, they live chiefly on the so-called reindeer lichen (Cladonia Rangiferina and Cl. alpestris). However, if necessary, to satisfy their hunger, they will eat the beard lichen (Alectoria and Usnea), found on trees, and a crust lichen (Parmelia olivacea). In summer the lichen is replaced in the diet by grass and other vegetation (see Appendix A).

¹² Bogs are Sphagnum peatlands whereas fens are brown moss peatlands. Peat in the past was heavily exploited as a fuel source on the islands and in some fjord districts.

¹³ A plant curiosity which grows in the Masi region is the Baikal Mjelt (Oxytropis deflexa subspecies norvegica). Outside of the Masi region, the plant is peculiar only to the Baikal Sea region.

4. Animal Life

At the turn of the last century the Forest Lapps still were able to snare wild reindeer in Finnmark. However, there are no longer any wild reindeer in Finnmark and the only reindeer to be found are the semi-domesticated animals belonging to the Lapps. By and large, human occupancy of North Norway has little disturbed the native wildlife. Indeed, carnivorous species almost or completely exterminated elsewhere in Europe still survive in North Norway. While animals such as bears, wolverines and wolves are still to be found, it appears that their numbers have been very much reduced during the years of the present century. In the past marauding wolves were a very great menace to reindeer herds but measures taken to curb the inroads of wolves on reindeer and other livestock have considerably reduced their numbers in Finnmark. Presumably also the northward advance of settlement has caused many animals to withdraw into less frequented regions. A resident of Masi reported that since the building of the road to Masi, in 1932, the numbers of wolves observed during the summers had noticeably declined.¹⁴

Foxes are common in Finnmark. One species of fox, the Arctic fox (Alopex lagopus) is widely distributed in the mountain districts

¹⁴A. Steen, Masi: En Samebygd, Oslo, 1963, p. 20.

and appears as far south in Norway as the Hardangervidda. This is also generally true of the wolverine. Numerous other small carnivores—stoats, weasels, otters, are to be found scattered throughout Finnmark.

Indigenous to the mountain regions of Norway and Sweden (also the north coast of the Kola Peninsula) is the small rodent, the lemming (Lemmus lemmus). The populations of this diminutive mammal are periodically subject to disastrous increases culminating in fatal migrations. At the periods of high lemming population a variety of other mammals simultaneously appear in large numbers. One of these, the Arctic vole, is found only in Finnmark and in the north of Troms province. A common rodent in Finnmark is the Mountain hare (Lepus americanus). The range of this animal extends as far north as the North Cape (Nordkapp) plateau. On the other hand, squirrels are seldom found as far north as Porsangen.

An animal introduced into North Norway and now very common is the mink. Musk-ox introduced into Troms province some years ago survived successfully and now are reported to be thriving.¹⁵

There is a rich assortment of bird life in Finnmark. Some species are peculiar to Finnmark and north Troms provinces; others

¹⁵B. Christiansen, "Fauna North of the Arctic Circle," in Ø. Vorren (ed.), Norway North of 65, Oslo, 1960, p. 76.

have a wider distribution over North Norway. Certain of the sea birds, such as the Arctic tern (Sterna macrura), the kittiwake (Rissa tridactyla) and the Arctic skua (Stercorarius parasiticus) are designated as arctic species, though examples of them may be found much farther to the south. Generally speaking the bird fauna of North Norway has a distinct subarctic distribution and in many cases the birds have migrated into North Norway from the northeast.¹⁶

Of the inland game birds, perhaps the ptarmigan (Lagopus mutus) is the most valuable to the Lapps. By shooting and snaring large quantities of these birds, which are then sold for cash, some Lapp families are able to increase their yearly income substantially.

The sheer cliffs of the Finnmark coast harbour the nesting places of enormous numbers of sea birds. Some examples are kittiwakes, guillemots (Uria aalge), puffins (Fratercula arctica) and razor bills (Alca torda). On the islands there are large rookeries (fuglevaer) of gulls, Arctic skua, greylag geese (Anser anser) and eider ducks (Somateria mollissima). Certain of the islands have become famous for the vast numbers of birds that gather on them during the breeding season. One in particular, Svaerholt, according to Christiansen, has perhaps over 3,000,000 pairs of kittiwakes. Islands such as Renø and Hornø, near Vardø, are known for their

¹⁶ Ibid., p. 77.

huge colonies of gulls, and Store Tamsøy in Porsangen is the nesting place of thousands of eider ducks and gulls.¹⁷

Some significant changes in the ranges of specific animal and bird species have been noted in Norway. Roe deer (Capreolus capreolus), for example, have reportedly been seen near Alta in Finnmark. Before their discovery near Alta they were thought to be on the verge of extinction and were found only in a small area of Østfold province in south Norway. It has been suggested that their appearance so far north is evidence of climatic amelioration. Numerous bird species have also extended their range northward. The lapwing (Vanellus vanellus), as recently as 1900 known only in distinct locations in the south, now breeds on the island of Loppa in Finnmark and has even been reported as far north as Spitzbergen.

For centuries the sea off the Finnmark coast has been the source of a rich fishery. Indeed, the presence of large quantities of cod, herring and halibut served to encourage early settlement of the islands and fjords. An economic response to the valuable fish resource was the development of the Russian Trade (Norwegian, Russehandelen) between traders from Kola and the borders of the White Sea

¹⁷ Ibid., p. 81.

and Norwegians living along the Finnmark coast.¹⁸ In much the same way settlement of the interior of Finnmark was influenced by the presence of plentiful supplies of fish in the rivers and lakes.

A typical arctic fish found along the coast of Finnmark is the small species of the smelt family, the capelin (Mallotus villosus). Cod, coalfish (Pollachias virens), haddock, halibut and herring are also present. There are several lesser known species of fish common only to Finnmark.

Seals are no longer abundant in Finnmark waters having been largely destroyed by indiscriminate hunting. Annually, however, the Ringed seal (Phoca hispida) and Bearded seal (Erignathus barbatus) collect along the shores of North Norway, and occasionally the Greenland or Harp seal (Phoca groenlandica). Walrus, on the other hand, are seldom seen along the Finnmark coast. Porpoise are common in the fjords.

Whaling, based upon the hunting of small whales (the lesser rorquals), is still undertaken along the Finnmark coast. From time to time the mammoth Blue whale (Balaenoptera musculus), the Sei

¹⁸The Russian Trade, or Russehandelen, was officially declared legitimate by the Norwegians in 1796 and continued up until 1917. Russian traders brought cargoes of grain, meal, lumber, hemp, linen, tar and assorted boatgear which they traded for fish. Popularly the Trade in the north was known as the Pomor Trade from the Russian word "po," meaning "near" and "mor," meaning "ocean."

whale (Balaenoptera borealis) and the Humpback whale (Megaptera nodosa) are observed in Finnmark waters.

Of the fish which spawn in fresh water, the salmon (Salmo salar), sea trout (Salmo trutta) and char are economically the most valuable. Important also are several species of fish which owe their presence in Finnmark to former connections with Swedish and Finnish waterways. Such species are the grayling (Thymallus arcticus), pike (Esox lucius), bream (Abramis brama), whitefish (Coregonus albula) and perch (Perca fluviatilis). Grayling, pike and Arctic char (Salvelinus alpinus) particularly are important as food for many of the inhabitants of the interior districts of Finnmark. Several of the large rivers in Finnmark are famous as salmon rivers. Large quantities of this fish are caught by anglers and in fish traps but by far the greatest proportion of salmon are netted offshore. However, salmon fishing is not a commercial operation and the fish caught are for home consumption or for local sale.

5. Lichens and Reindeer Grazing

Reindeer are grazing and browsing animals being relatively selective in their choice of food. The idea that they survive entirely upon reindeer moss or lichen is completely erroneous. On the other hand, it is the relative abundance, texture, distribution and composition of the lichen cover that determines the value of the winter

range for without the lichens there could be no reindeer industry at all (see Appendix A). The significance of lichen to the reindeer and the reindeer industry is made clear in this statement of A. E. Porsild:

The only reason why lichens are so important to reindeer is that they occur very abundantly in certain habitats, and are there readily available even under moderately deep snow. Without this ready source of food, large herds of reindeer could not be successfully maintained throughout the winter anywhere in Arctic or Subarctic regions.¹⁹

It is well to keep in mind, however, that efforts to integrate farming practices with reindeer husbandry by the use of grazing trials on grass pastures appear, as Scotter observes, "to support the idea that lichens are not a necessary component of the reindeer diet."²⁰

Lichens remain unimportant on the summer range where grasses, sedges and herbaceous plants are easily obtained. It is on the winter range that the lichens, in spite of their lower nutritive capacity as compared with other forage, are of paramount importance to the reindeer diet. This is because, unlike other forage which once covered by snow loses its food value, that of the lichens remains un-

¹⁹A. E. Porsild, "Land Use in the Arctic--Part I," Canadian Geographical Journal, Vol. XLVII, No. 6, June 1954, p. 240.

²⁰G. W. Scotter, "Reindeer Ranching in Fennoscandia," reprinted from the Journal of Range Management, Vol. 18, No. 6, 1965, p. 379.

impaired throughout the winter months. In effect, depending upon the locale, the lichens only become less important in the reindeer diet during the three or four months that the animals are on the summer range. In view of their importance, then, it can readily be understood why conservation and protection of lichen pasturage is of prime concern to the reindeer industry.

The recovery rate of lichen after grazing is exceedingly slow, depending upon the degree to which it has been cropped. Generally even light cropping will require a recovery-rate of four to five years.²¹ The summer range, on the other hand, is in comparison expendable since it renews itself each year. Another aspect of the lichens is their easy fragmentation during dry periods which, if it is excessive, can soon lead to total destruction of the lichen cover. For this reason the herds must be kept off the lichens during the dry summer months, so as to prevent trampling by the animals. No less destructive are the peak years of rodent activity (lemmings for example). Particularly injurious are the effects of fire which, in the case of dry lichens, may result in total loss of available pasture for many years.

Intelligent lichen range management is crucial to successful reindeer husbandry, for it is the winter range and its serviceable

²¹G. A. Llano, "Utilization of Lichens in the Arctic and Subarctic," Economic Botany, Vol. 10, No. 1, January-March, 1956, p. 379.

recovery which govern the extent of any reindeer operation. Herd management entails, therefore, the correct evaluation of the lichens' ability to support a herd in such a way that the herd may move slowly over the winter range or remain within a fairly limited area several days or weeks without severely depleting the range. To do this a rotation of pastures must be implemented with the herders selecting in advance a range where the conditions are suitable for the herd.

The evidence of research into many aspects of lichen and reindeer have indicated means by which improvement may be introduced. An illustration is the experiments on intensive use of lichen pasture being conducted at Asankylä, Finland.²² In one experiment four square kilometres or roughly 990 square acres had supported 200 reindeer for sixteen months. Upon this basis a rotation grazing system of eight to ten years might be feasible, resulting in less herding, better management during calving and slaughtering, and utilization of those species of forage normally incompletely exploited.

The Russians have probably done the greatest amount of investigation into lichen and reindeer management (in Europe at least). They apparently recommend, under open range conditions where the major forage lichens produce their maximum quantity during the first ten years of growth, a three-year pasture rotation utilizing 30-35 per

²²Scotter, op. cit., p. 302.

cent of the lichens every third year.²³

According to Porsild, reindeer range in arctic Europe or Asia has roughly the equivalent carrying capacity of that in North America.²⁴ For Alaska, Palmer found that on the average tundra-coast range the minimum area sufficient to support an adult reindeer for a year was thirty-three acres, distributed as follows:²⁵

Spring and early Summer (2-1/2 months).....	4 acres
Summer (2 months).....	2 acres
Autumn and early Winter (4 months).....	10 acres
Winter (3-1/2 months).....	<u>17</u> acres
Total.....	33 acres

However, the recommended acreage per head was forty to sixty for year-long grazing. Russian investigations in the Anadyr Peninsula of Siberia concluded that for eight months winter grazing an adult reindeer needed the following amount of pasture:²⁶

²³Loc. cit.

²⁴Porsild, op. cit., p. 27.

²⁵Ibid., p. 23.

²⁶Ibid., p. 27.

Forest Tundra.....21 acres

Scrubby Tundra.....23 acres

Non-scrubby Tundra.....42 acres

In 1964 the number of reindeer per square kilometre in the four winter Reindeer Grazing Circuits of Finnmark ranged between 2.8 reindeer (Varanger) to 6.2 reindeer (Kautokeino).²⁷

²⁷E. Lyftingsmo, "Oversyn Over Fjellbeite i Finnmark," Norske Fjellbeite, Vol. XV, 1965, p. 367.

CHAPTER II

THE LAPPS*

1. Definition of a Lapp

National censuses generally have used the distinction of language and descent as the basis upon which to define the term "Lapp." This has been the case in Norway though language in the long run seems to have developed as the only workable means for decision. The reason for this has been the gradual assimilation and obliteration of Lappish traits which has rendered it increasingly difficult to establish who is a Lapp. Thus, in the census of 1950, descent had to be entirely disregarded and language alone used as the criterion.¹

The Finnish State Commission (1949-1951) found language to be the most practicable and tangible yardstick and applied the following definition:

* The name "Lapp" has fallen into disrepute within Scandinavia because of derogatory connotations attached to the word. Outside of Scandinavia, however, "Lapp" carries no disparaging overtones and is widely understood. Within academic circles in Scandinavia the Lapps' name for themselves, sabme, plural samek, is popularly used, the word becoming, in Norwegian, same, plural samer. Neither of these forms is widely understood outside of Scandinavia, however, and therefore the conventional name, "Lapp," will be retained in this thesis.

¹ Ø. Vorren, "Lapp Settlement and Population," in Ø. Vorren (ed.), Norway North of 65, Oslo University Press, Oslo, 1960, p. 128.

A person, whose parents or one of them speaks or spoke Lappish at home, and who speaks Lappish himself is a Lapp; and with regard to small children the language of the family decides.²

Such a definition unfortunately excludes those of Lappish descent who do not speak Lappish and therefore is not entirely satisfactory.

While the Finnish definition is workable and is, therefore, used in census enumerations, there is reason to treat reports of Lappish population numbers with some reserve. In an independent survey of the Lapp population of Troms and Finnmark, in 1950, Ørnulf Vorren found the official census figures to be too low.³ One of the reasons for this, Vorren suggested, was the reluctance of some of the Lapps interviewed to reveal their ethnic origin by claiming knowledge of the Lappish language. Another reason, of course, was that many of the Lapps interviewed actually spoke other than Lappish in the home, though they were familiar with the language. Therefore, while the general decline in the absolute numbers of the Lappish population in Norway since 1930 may be partly attributed to the assimilation of the Lapps into Norwegian society, the results of the independent survey also indicated that the Lapps, because of discrim-

²K. Nickul, "Report on Lapp Affairs," Fennia 76, No. 3, 1952-1953, p. 22.

³Vorren, op. cit., p. 128.

inatory attitudes toward them, felt motivated to try and conceal their ethnic identity.

The world population of the Lapps in 1930 was estimated to be 31,000. The distribution of the Lappish people was as follows: Norway 20,000, Sweden over 7,000, Finland 2,000 and the Soviet Union 1,500 (on the Kola Peninsula).⁴

Except for Norway, where there has been no official census of the Lapps since 1930, all the above countries have conducted official Lapp censuses since 1930.⁵ The majority of the Lapps (and all Coast Lapps) live in Norway, where their southern limit of distribution reaches the town of Røros in the province of Sør-Trøndelag (Figure 5). But the largest proportion of the Norwegian Lapp population is to be found in North Norway.

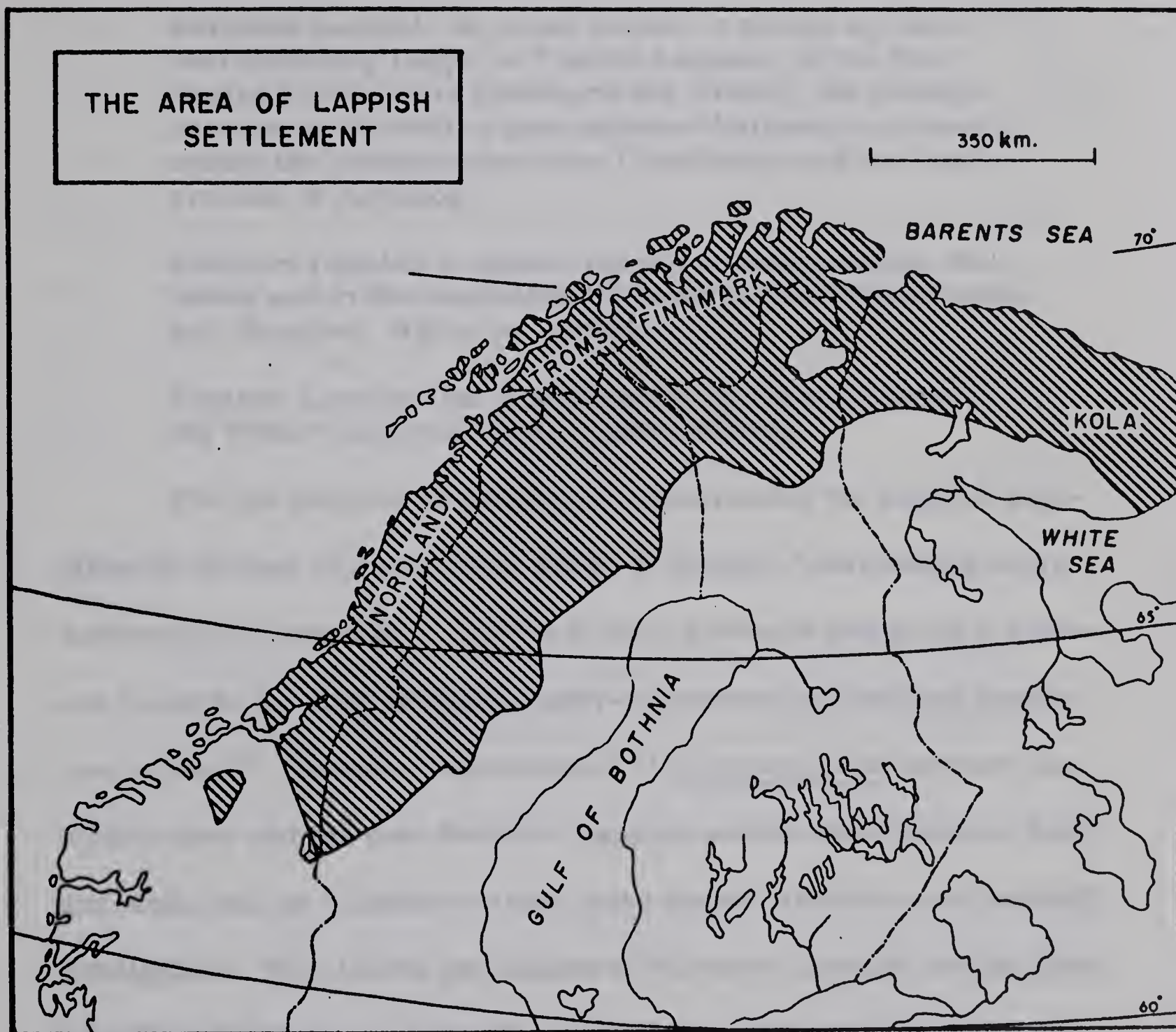
2. Linguistic and Economic Divisions

Before examining the Lappish population of Finnmark it is necessary to clarify certain linguistic and economic divisions pertaining to the Lapps.⁶ The Swedish philologist, Collinder, divided

⁴ Paine, op. cit., p. 3.

⁵ Nickul, op. cit., pp. 16, 20, 22, provide the following Lapp census figures: Sweden 9886 (1945), Finland 2529 (1949), Soviet Union 1920 (1934).

⁶ The data for this section is taken from Nickul (1952), Paine (1957) and Vorren (1960).



Source: Ø. Vorren, Lapp Life and Customs, London, 1962

Figure 5

the Lappish language into three main branches, namely, Northern, Southern and Eastern Lappish. He designated these as follows:

Northern Lappish, in broad terms, is spoken by reindeer-breeding Lapps in Finnish Lapland, in the Norwegian provinces of Finnmark and Troms, the Swedish province of Norbotten (and adjacent districts in Norway), except the southernmost zone (Arvidsjaur and the southern half of Arjeplog).

Southern Lappish is spoken chiefly in southernmost Norbotten and in the administrative provinces of Västerbotten and Jämtland, Røros in Norway.

Eastern Lappish, the sub-dialects are Inari (spoken by the Fisher Lapps of Inari), Skolt and Kola.⁷

For the purpose of linguistic simplification the Lappish population of Norway can be, in the words of Nickul, "overlooking small differences of language. . . divided into a northern group and a southern group to the first of which ninety-six percent of the Lapp population belong."⁸ However, on the basis of communication between one dialect area and the next Southern Lappish and the sub-dialects, Skolt and Kola, can be eliminated since these dialect areas are not mutually intelligible. This leaves the dialect of Northern Lappish and the Inari sub-dialect of Eastern Lappish. Differences of expression and comprehension exist between these two dialectal groups so that, as Paine

⁷ Paine, op. cit., p. 4.

⁸ Nickul, op. cit., p. 17.

says, "complete mutual intelligibility even within this area (Eastern Lappish and Northern Lappish) does not exist."⁹ Thus difficulties in conversation might arise between a Fisher Lapp of Inari and a Finnmark Lapp. Moreover, there are certain differences of dialect among persons speaking Finnmark-Lappish, though not sufficient to hinder understanding. It is in fact possible to separate Finnmark-Lappish into two groups, an eastern and a western. Polmak and Karasjok, for example, belong to the eastern group and the dialect of Kautokeino, Karesuando and Enontekiö¹⁰ to the western.

In discussing the kinds of Lappish economies in the Northern Lappish area the following remark of Robert Paine is pertinent:

In Lappish studies, attention is drawn by the nomenclature-- "Mountain Lapps," "River Lapps," "Coast Lapps," "Skolt Lapps," "Forest Lapps," and so forth--to ecologically defined differences, or at least divisions, within the ethnographical whole--"the Lapps."¹⁰

In the light of Paine's comment the main types of economy found in the Northern Lappish area are the following: in Finland, on the basis of mutual use of the Finnmark-Lappish dialect, one can group together the Reindeer and River Lapps. The first named are principally reindeer breeders around Enontekiö and Sodankylä; the others are salmon fishermen on the Tana and Utsjoki rivers, cattle, sheep and reindeer

⁹ Paine, op. cit., p. 4.

¹⁰ Ibid., p. 15.

breeders and to some extent farmers. According to Nickul, in 1949 the combined population of these two groups of Lapps was 1,509.¹¹ Within Sweden there are also Swedish Lapp groups belonging to the Northern Lappish linguistic branch. The southern limit of their distribution is reached in Jokkmokk, and in 1940 the population was 2,500 of which over half were reindeer-breeding Lapps.¹² A small number of the reindeer-breeding Lapps in Sweden are so-called Forest Lapps who maintain a semi-nomadic economy utilizing the forest reindeer species (Rangifer tarandus fennicus). The majority of the reindeer herders, however, are Mountain Lapps, and a notable feature of their seasonal activities is the extended migrations they make to summer camps and pastures in Norway.

As pointed out earlier, the majority of the world's Lappish population is to be found in Norway, and more particularly in North Norway. In the provinces of Troms and Finnmark at least three main economies may be distinguished:

The Coast Lapps: They comprise a very large proportion of all the Lapps in Norway. As the name implies they are found in coastal Norway, from north Nordland province to east Finnmark. The greatest concentration of Coast Lapps is, however, in the province of Finnmark, where they are engaged primarily in fishing and agriculture.

¹¹Nickul, op. cit., p. 23.

¹²Paine, op. cit., p. 6.

The Settled River and Inland Lapps: They are found in the interior of Finnmark along rivers that are close to the winter villages of the Mountain Lapps, such villages as Karasjok, Kautokeino and Polmak. Their economy is mixed, derived from lake and river fishing, forestry work, hunting, milk and meat production. Distinct ties normally exist between the settled population of a Mountain Lapp village and the reindeer industry.

The Mountain or Reindeer Lapps: They comprise a small minority (perhaps 2,000) of the Lapps. For their livelihood they are dependent mainly upon reindeer and live a semi-nomadic or settled existence. In 1930, Henriksen reported the Mountain Lapp population as amounting to 7 or 8 per cent of the 20,000 Lapps in Norway.¹³

3. The Lapp Population of Finnmark

The Norwegian census has made no ethnic or linguistic distinctions since 1930. In 1950, however, Ørnulv Vorren conducted an independent survey of the Lappish population of Finnmark. Vorren classified the Lapps under two broad categories: Coast Lapps and Inland Lapps, the latter including the Settled River and Inland Lapps, and the Mountain Lapps. The results of Vorren's investigations are summarized in Tables III and IV.

¹³H. Henriksen, "Sameliv og Samfunnet, " in A. Nesheim (ed.), Sameliv, 1951-1952, Oslo, 1952, p. 94.

Table III--Proportions of Coast Lapps to Other Lapps,
North Norway 1930 and 1950

Census Year	Finnmark			Troms			Nordland		
	Coast Lapps	Other Lapps	Total	Coast Lapps	Other Lapps	Total	Coast Lapps	Other Lapps	Total
1930	7,902	2,516	10,418	4,635	2,058	6,693	686	1,060	1,746
1950*	3,750	3,610	7,360	231	576	807	433	202	635

North Norway			
	Coast Lapps	Other Lapps	Total
1930	13,223	5,634	18,857
1950*	4,414	4,388	8,802

Source: Ø. Vorren (ed.), Norway North of 65, p. 129.

*In the figures of 1950, bilingual families are included as Lapps when one of their languages is Lappish, even if they speak Norwegian or Finnish at home.

Table IV--Lappish Populations in North Norway, 1950*

Province	Coastal Districts with Lapp Inhabitants			Inland Districts with Lapp Inhabitants		
	Total	Lapps	Per cent of Total	Total	Lapps	Per cent of Total
	Pop.			Pop.		
Finnmark	45,741	3,750	8.2	4,263	3,610	84.7
Troms	21,596	231	1.06	8,457	576	6.8
Nordland	8,936	433	4.8	11,410	202	1.8

Source: Ø. Vorren (ed.), Norway North of 65, p. 130.

*These figures cannot be compared directly with preceding censuses.

As a result of his study Vorren was able to determine that the Coast Lapp component of the Lappish population had declined since 1930. Thus, in 1930, 75 per cent of all Finnmark Lapps were Coast Lapps but by 1950 the figure had dropped to 50 per cent. The propor-

tion of the Lapp population to the total population of the country also had diminished. In 1930 the Lapps comprised 5 per cent of the Norwegian population; in 1950, just over 2 per cent.

As Table IV and Figure 6 clearly show, the Lapps constitute a majority of the population in interior Finnmark. And though there has been a 50 per cent increase in the Norwegian component of the population in the rural districts of interior Finnmark, there has been an accompanying rise of 43 per cent in the Lappish population.

FINNMARK

DISTRIBUTION OF LAPPISH-SPEAKING POPULATION 1950

50 km.

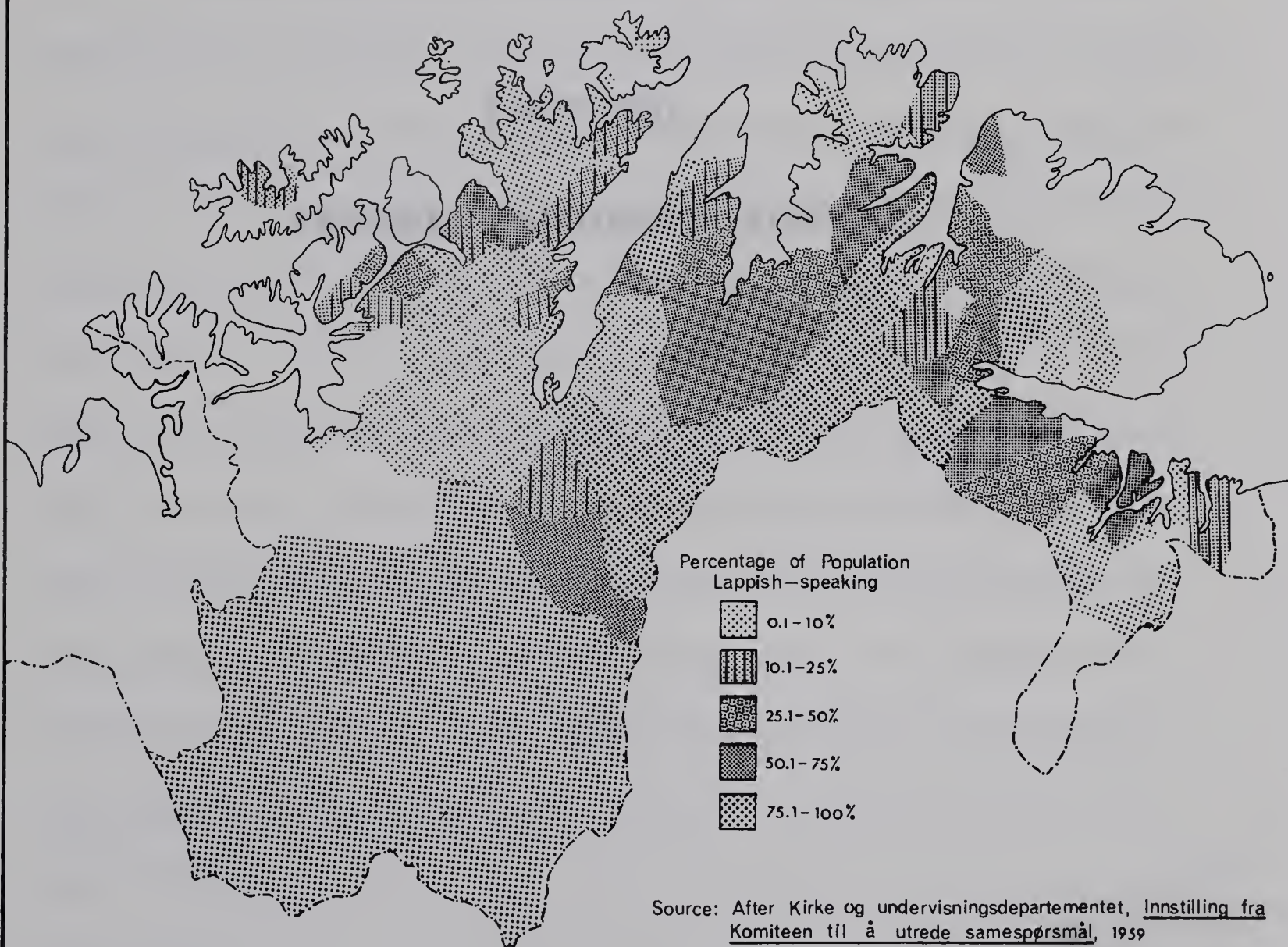


Figure 6

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PART TWO

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THE REINDEER IN THE FINNISH LITERATURE

CHAPTER III

THE EARLY PERIOD (UP TO 1750)

A. The Origin of the Lapps and Reindeer Domestication in Fennoscandia.

The terminological distinctions Coast Lapp, Forest Lapp and Mountain Lapp (Reindeer Lapp) are derived from the Northern Lappish, maerrâ-olmuš (sea-man), dãlulâš (settled-man) and baggje-olmuš (up-man).¹ The names infer ecological boundaries with associated cultural variations and their use as a classificatory device has been adopted in Scandinavia. Evidently before the seventeenth century no such distinctions were necessary for the cultures of the Coast Lapp and Mountain Lapp were alike. Differences arose only when the ecologically separated hunting-fishing economies developed new tendencies which, as time went on, hardened into accepted practices. For example, the hunting-fishing economy of the Mountain Lapp yielded to a pastoral economy of reindeer nomadism and the semi-nomadism of the Coast Lapp diminished little by little until their economy became firmly bound to the sea.

¹R. Paine, Coast Lapp Society I, Tromsø Museums Skrifter, Vol. IV, Tromsø, 1957, p. 19.

1. The Question of Origin

The question of the origin of the Lapps in Scandinavia has been the focus for considerable ethnographical and archaeological research since the mid-nineteenth century. A generally accepted hypothesis until the 1930s regarded the Lapps as being immigrants from the east associated with the "large migrations between 700 and 400 B.C., when the Scythians were careering about in central and eastern Russia."² Another rather unusual theory suggested the arrival of the Lapps in Scandinavia coincided with the period of the "Fimbul winters" of the Iron Age.³ During the period of climatic stress the original inhabitants were thought to have been forced southward leaving an uninhabited land into which the reindeer and Lapps migrated.⁴ And because the archaeologists of the 1930s looked upon Scandinavian archaeological evidence as of Nordic origin, the first inhabitants of the peninsula were regarded as

²E. Manker, "Swedish Contributions to Lapp Ethnography," The Journal of the Royal Anthropological Institute, Vol. LXXXII, 1952, p. 40.

³The Edda, two books written in Iceland in the thirteenth century, refers to the "Fimbul-vetr," meaning "the great and awful winter preceding the end of the world." The poems of the Edda are of a mythological, heroic or instructive sort, many being older than the thirteenth century.

⁴E. Manker, People of Eight Seasons, New York, 1964, p. 30.

the forebears of the Norwegians and Swedes, and not the Lapps. Support for this theory seemed to lie in the work of K. B. Wiklund, the eminent Lapp authority, who had been able to trace Nordic loan words in the Lappish language.

Discovery of the Stone Age Komsa culture on the arctic coast of Norway forced re-examination of previous theories. Some investigators (Wiklund, Nordhagen) now postulated that the Lapps were an inter-glacial people who had survived the Ice Age in "refugia" along the arctic littoral. Since at least one animal species, the mountain lemming, had survived by this means it seemed sufficient reason to suggest the Lapps might have done so too. One perplexing gap in this "over-wintering" theory was the absence of Komsa finds along the coasts of Nordland and Troms provinces, even though zoologists and botanists had evidence of Ice Age "refugia."⁵ On the other hand, geologic maps of the land-ice melting period indicate an ice-free corridor linking the arctic coast to the east. Such evidence led to the theory that the "proto-Lapps" of the Komsa culture had crossed over the ice-free corridor into Scandinavia in an immediate post-glacial period.⁶ Another theory, however, considered the "Proto-Lapps" to

⁵ Komsa finds have been documented from Alta north along the arctic coast of Kola Peninsula.

⁶ Manker, op. cit., p. 34.

be survivors of the Ice Age from central Europe, who later wandered northward to occupy the ice-abandoned coastal fringe. Ernest Manker, the Swedish ethnographer, believes that possibly the Lapps moved northward along or over the frozen Baltic Sea reaching the ice-free arctic littoral, from where they spread either inland to become the Forest and Mountain Lapps or remained and continued along the coast to become the Coast Lapps of today.⁷

Anthropologists have turned up new evidence. Lundman, from blood-group relations and cranial measurements, concludes that the Lapps are anthropologically of two markedly different groups: a north group (the Coast Lapps) of more or less Mongol origin and a south group (the Mountain Lapps) of "cross-bred" east European but not Mongolian elements, with primitive Norwegian elements.⁸

Whatever may evolve as the unequivocal answer to the question of Lappish origin, one thing is clear: the material remains of a prehistoric culture, possibly Glacial, Late-Glacial or Post-Glacial are extant in northern Scandinavia. Their presence attests to a primitive and very old hunting and fishing people. Manker writes:

⁷Ibid., p. 39. (See also E. Manker, "Inlandsisens avsmältning och Lapparnas Invandring," Ymer, Vol. 71, 1951, pp. 225-231.

⁸B. Lundman, "On the Origins of the Lapps," Ethnos, Stockholm, 1946, p. 86.

In the same region, representatives of a people displaying the most primitive racial elements in Europe still survive, namely the Lapps. In the interior these Lapps remained to a pronounced extent a hunting and fishing people until they began to domesticate the reindeer and became reindeer-herding nomads; on the arctic coast they remain hunters and fishermen to this day.⁹

2. Reindeer Domestication in Lapland

What might be described as the symbiotic relationship between the Lapps and reindeer deserves some explanation, for it is generally accepted that the reindeer breeding of the Mountain Lapps is of relatively recent origin.

Chinese historical sources provide the earliest documented accounts of the domestication of reindeer. They speak of reindeer breeding tribes of the Baikal region in 499 A.D. and also in the eighth and ninth centuries.¹⁰

The earliest recorded evidence in Scandinavia dates from the ninth century (ca. 890 A.D.). The source is the valuable account of Ohthere (Ottar), a Norwegian chieftain who apparently lived at the straits between the island of Senja south of Tromsø and the mainland, a site which even to this day witnesses the yearly migration of rein-

⁹ E. Manker, "Swedish Contributions to Lapp Ethnography," The Journal of the Royal Anthropological Institute, Vol. LXXXII, 1952, p. 44.

¹⁰ Ibid., p. 45.

deer herds and Lapps to summer range on the island.¹¹

In an account to his lord, King Alfred of England (which Alfred recorded), Ohthere tells of his six hundred tame reindeer,

"among them were six decoy reindeer; these are very valuable among the Lapps because with them they catch the wild reindeer."¹²

Hatt makes the assumption that it was the Lapps who tended the herds of Ohthere, for quite reasonably he argues:

It would have been especially hard to tend his (Ohthere's) reindeer himself, because the reindeer, in the district where he lived, undertake long migrations across the difficult border mountains between Norway and Sweden. . . and there is no reason to suppose that Ohthere's herds-men were not Lapp; nor is there any reason to doubt that they owned reindeer themselves.¹³

It is unlikely, however, that the economic specializations implied in the names Coast Lapp and Mountain Lapp existed in Ohthere's day, for extensive reindeer nomadism did not develop until several centuries later. Moreover, the survival of the Coast Lapps depended upon both a limited transhumance with reindeer and prod-

¹¹G. Hatt, Notes on Reindeer Nomadism, Memoirs of the American Anthropological Association, Vol. VI, No. 2, 1919, p. 121 (see also B. Laufer, The Reindeer and Its Domestication, Memoirs of the American Anthropological Association, Menasha, Wisconsin, 1917).

¹²Paine, op. cit., p. 20.

¹³Hatt, op. cit., p. 121.

ucts of the sea.¹⁴ The differences between the two groups were, therefore, nothing more than those arising from responses to local ecological conditions.

Evidence to suggest early attempts at reindeer breeding is contained in the reports of Torolv Kvällulvsson who made tax-collecting and trading journeys to north Sweden during the winters 884-886 A. D. Kvällulvsson's travels predate the tax-collecting expeditions of the birkarlar¹⁵ into Lappish territory and his account of what he saw there clearly indicates that, particularly in the present-day Lapp districts of Åsele and Lycksele, the Lapps had attained a fairly advanced level of reindeer breeding.¹⁶ Evidently too, there was every reason to believe that the domestication of reindeer had been in existence for several hundred, perhaps a thousand, years. Certainly Hatt was sufficiently convinced by the statement of Ohthere to write dogmatically, "reindeer breeding in Scandinavia was not in the initial

¹⁴Paine, op. cit., p. 20.

¹⁵The birkarlar (from Birkkala in Finland, hence "birkarl," plural "birkarlar") were traders of Finnish origin in the employ of the Swedish king. Most came from the Swedish Baltic towns of Torneå, Piteå and Luleå and were granted the privilege of trading with the Lapps and taxing them. An ancient document mentions the birkarlar as early as 1328.

¹⁶Manker, op. cit., p. 45.

stage in the ninth century."¹⁷

The debate over the origins and evolution of reindeer domestication has occupied numerous prominent scholars. Laufer's paper entitled "The Reindeer and its Domestication," written in 1917, stimulated critical examination of the evidence and produced a number of varying theories and opinions. Gudmand Hatt, for example, took issue with Laufer and Hahn that reindeer nomadism had been inspired by horse and cow domestication, i. e., merely an imitative process.¹⁸ Instead, Hatt's contention was that hunters familiar with the reindeer's habits began by taming reindeer as decoy animals (Ohthere spoke of decoy reindeer in his account to King Alfred) and this lead eventually to the domestication of whole herds.¹⁹ A similar explanation envisaged reindeer domestication as the outgrowth of early efforts to drive herds of wild reindeer into a kind of corral or vuobmanak, in Lappish. At first the purpose was to slaughter the animals but in time it proved a useful way to tame them. The ancient remains of vuobmanak have been discovered, for example, in Nord-Varanger district (now Båtsfjord district) of Finnmark;²⁰ while

¹⁷ Hatt, op. cit., p. 128.

¹⁸ E. Hahn, Die Haustiere in Hatt, op. cit., p. 100.

¹⁹ Hatt, op. cit., p. 100.

²⁰ Pers. comm. Ø. Vorren, Tromsø, 1965. (See also Ø. Vorren, "Samisk Villreinfangst i Eldre Tid," Ottar, No. 17 (1958, No. 17 [1958, No. 2], Tromsø, June 1958, 42 pp.).

scattered throughout the reindeer grazing regions of Finnmark are modern versions of vuobmanak which are used every fall in work with the herds.

Inevitably these arguments have raised speculation as to whether the various forms of reindeer nomadism developed indigenously or evolved from a common origin. Manker is of the opinion that in Scandinavia reindeer breeding was probably autochthonous but later acquired features from the cattle breeding Norse. Another writer, Dr. Israel Ruong, himself a Lapp, sees in the "extensive" system of reindeer herding in the north and the "intensive" system in the south the evolutionary end-points of methods initiated by the Lapps at an early stage in their domestication of the reindeer. In this context the "intensive" system can be said to have developed from the custom of using decoy reindeer and the gradual breeding of these to form a tame herd. The "extensive" system, on the other hand, was the outcome of the use of the vuobmanak but the entrapped animals were looked upon solely as a source of meat and so there was limited domestication.²¹

The means by which reindeer entered Scandinavia is uncertain. Recent zoological discoveries support the theory that possibly the "over-wintering" concept may apply equally well to the species of

²¹Manker, op.cit., p.47.

Mountain reindeer; accordingly, the Mountain reindeer (Rangifer tarandus) are thought to be survivors from glacial "refugia" along the coast of Norway which, unlike the Forest reindeer (Rangifer tarandus fennicus) did not migrate from the south or east with the melting of the inland ice.²² The evidence is inconclusive, however.

The migratory behaviour of the Mountain reindeer cannot be ascribed entirely to natural instinct. Such a view disregards the considerable influence man undoubtedly has exerted, particularly in the case of the long migrations.²³ No less a misconception is the belief that the nomadism of the Mountain Lapps is instinctive, as Manker makes clear in the following statement:

This nomadic instinct is secondary in the question of origin of Lappish nomadism. In both its genesis and its continued existence, the nomadism of the reindeer breeding Lapp is dependent on the reindeer's habits and these are ecologically conditioned.²⁴

In order to understand the behaviour of the Mountain reindeer several aspects of the environmental conditions affecting reindeer herding should be recognized. The explanation for the Mountain reindeer's

²²S. Paterson, Anthropogeographical Studies Among the Jokkmokk Mountain Lapps, Goteborgs Kungl. Vetenskaps och Vitterhetssamhalles Handlingar, Sjätte Följden, Serie A, Band 6, No. 2, 1956, p. 13.

²³It should be emphasized that, despite the rather strong urge of reindeer to migrate, there is nothing to suggest that they cannot learn to adjust to a comparatively sedentary existence.

²⁴E. Manker, The Nomadism of the Swedish Mountain Lapps, Acta Lapponica VII, Stockholm, 1953, p. 23.

migratory tendencies may be said to be "based on concrete functional reasons rather than on some mystical mental instinct." One of the "functional reasons" concerns the animals' desire for better pasturage: in spring the winter range of mainly Cladonia rangiferina (Reindeer moss) is forsaken for the grass and herb pasture at the coast and on the offshore islands; similarly, in the fall the animals leave the summer range for the fresh lichen of the winter grazing areas. It is also a fact that the does feel a compelling urge to return year after year to the same calving areas (kalvingsområde) and there is the very practical necessity of escaping the torment of insects and the excessive heat of the interior.²⁵

²⁵Two serious insect pests are the Reindeer Fly (Oedmagna tarandi L.) and the Nose Fly (Cephenomyia trompe L.) Both torment the animals unmercifully during the summer. The Reindeer Fly or hide gadfly lays its eggs in the fur of the reindeer some time during the summer months. From the eggs hatch larvae which bore through the hide of the host animal remaining there, as a parasite, for some nine months. Completion of the cycle is reached when the mature pupae fall to the ground to produce the new flies. In the case of the nose gadfly, entrance to the animal is gained through the nostrils rather than through the hide.

Apart from the intense irritation they cause the reindeer, the flies are the cause of weight loss and an inferior animal in terms of hide quality and meat. Experiments in the Soviet Union have indicated that a weight gain of up to six kilograms (approximately 13 lbs.) per animal is possible if the fly menace can be eradicated. The economic benefits to be gained from their control are, therefore, substantial; and experiments are being conducted to furnish a remedy to the problem. One of these is a serum which, when injected into the young reindeer, would render it immune to the larvae of the Reindeer Fly (see Y. Alaruikka, Reindeer Breeding Among the Finno-Ugric Tribes).

By escaping to the cooler and windier regions of the coast, the reindeer are relieved to some considerable degree from the harassment of the gadfly and the numerous other insects which prey upon them.

The search for suitable fodder is associated with climatic conditions. It would be unlikely that the reindeer could survive unaided at the coast because of the extreme snow depths, whereas the thinner snow-cover of the inland regions allows the animals to dig with their fore-legs to the lichen beneath. Atmospheric conditions and their effect upon the snow-cover can be extremely hazardous for the reindeer. It is not surprising, therefore, that to the Lapps snow conditions embrace a whole range of subtle variations. As an example, reindeer herds are in danger of starving to death if an ice crust too hard for them to break through forms over the lichen. In Swedish Lapland such a phenomenon is called "flen" and on one occasion was responsible for the devastation of herds in Jokkmokk parish during the winter of 1909-1910.²⁶ This quotation from the book by the Lapp herder, Johan Turi, explains the situation vividly:

And towards the end of the rutting season it is generally thawing for there is already snow on the ground. At that time, when the bulls are worn out, then it generally thaws, and that thaw is called golggonjacco (the debility thaw). And then you generally lose the herds because it is very bad weather, fog and rain, and when it thaws much there is bare ground in some places, and in other places the snow is left lying, and when it freezes, then that snow is turned to ice or, as it is called bodneskardan (bottom crust), and it remains all through the winter just as it is at the time when the last thawings stop and the cold comes. But if the thaws do not spoil the snow, then it will be a

²⁶Patterson, op. cit., p. 22.

good winter, unless there comes very deep snow, for the reindeer can get to the mosses even if the snow is fairly deep, if only there is a clean bottom, that is, no ice on the bottom. And it is at this time that the Lapps are afraid (wondering) what the winter will do.²⁷

3. The Sii'dâ

It is useful to the understanding of Lapp migrations to introduce the term sii'dâ (plural sii'dât),²⁸ a Northern Lappish word meaning a group of families who migrate together, or a herding group. The concept of the sii'dâ is of ancient origin, probably dating from the time when several families communally shared the products of a particular hunting-ground to which other families were forbidden access.²⁹ Over the historic period the original communistic principle sustained modification. Lowie explains:

Whereas anciently the catch of fish was shared, later the sii'dâ came to recognize the individual's privilege to fish at particular spots; and in 1733 a decree explicitly eliminated the wolf-hunt from the roster of compulsorily communal enterprises and sanctioned the individual appropri-

²⁷J. Turi, Turi's Book of Lappland, Jonathan Cape, 1931, 1. 53.

²⁸For local variants of the word see Manker, op. cit., p. 13.

²⁹According to Virtanen, "a characteristic feature of the East-Lapp traditional hunting justice appears to have been, that if anyone hunted unlawfully on the domain of another man or his family, it was his duty to surrender a part of the game (not the whole of it), to the land owner." (See E. A. Virtanen, "Hunting on Another Man's Ground," Transactions of the Westermarch Soc. Vol. 1, Copenhagen, 1947, p. 94.

tion of glutton [wolverine], otter, fox, and marten skins.³⁰

The introduction of reindeer to the Mountain Lapp economy merely involved an adjustment of the communistic principles of the traditional sii'dâ. It took the form of a number of families who owned their reindeer and equipment separately but shared collectively in the use of pasture and the tending of the herd, all members of the same sii'dâ having equal rights. Beyond this arrangement the sii'dâ represented little more than a loosely-knit form of community organization with a leader, sii'dâ-ised, chosen upon the members' tacit recognition of his superior experience, intelligence and wealth.³¹

In time the migration routes of the individual sii'dât and their herds became reasonably fixed. A main route was chosen from which a number of alternatives could be selected depending upon such factors as pasture, snow-cover and stream flow. The migration routes tended to conform to terrain conditions which satisfied the needs of the herd. Insofar as the sii'dât employed the traditional means of transport, the herd and families closely followed the same course. The family moved

³⁰R. H. Lowie, "A Note on Lapp Culture History," South-western Journal of Anthropology, Vol. 1, No. 4, 1945, p. 449.

³¹Vorren explains that "this [leadership] is automatically his [sii'dâ-ised] as long as he owns the greatest number of reindeer and has the greatest experience or ability." (See Ø. Vorren, Lapp Life and Customs, Oxford University Press, London, 1962, p. 145.)

in caravan with equipment and belongings in winter carried in pulkas, boat-like sleds which in much of Finnmark have been superseded by a Finnish sled or akja. The calving grounds were fixed points on the migratory route. The locations of the calving grounds vary from herd to herd--some herds have their calving grounds on the islands, others on the mainland. Generally the calving areas will lie somewhere between the winter and summer ranges. As already pointed out, the desire of the does to reach the calving grounds is strong but they can be, if necessary, diverted by the herders to other areas.

In those cases where the herd has its calving grounds on an offshore island, it is imperative that the does reach the calving grounds before the calves are born. If they do not the situation is little short of disastrous since the new-born animals are not strong enough to undertake the long swim often necessary to reach the island pastures. So strong can be a doe's urge to reach the habitual calving grounds that calves born en route are often abandoned and must be cared for by the herders.

The area covered by the calving grounds may be quite extensive and location of the grounds is determined by conditions of terrain and forage which offer the optimum chance for survival of the calves. Turi says:

There is another dangerous thing in calving time. As there is no food for the reindeer in the forests, they must keep to the high fells; then too the snow is generally softer up there. . . and for that reason it is better up on the high fells. . . . (Turi, op. cit., p. 99)

In this connection Y. Alaruikka made the following observation in his report of reindeer management in the Soviet Union:

When the calving season draws near, the herds are directed to terrain where the spring sunshine has thawed as much of the snow as possible. . . preferably along ridges formed during the Ice Age. . . . The southern slopes of these ridges melt their snow soonest and the herds are taken to these parts so as to prevent the calves from calving on snow, which might cause the death of the newborn calves. [Alaruikka is referring to a reindeer station.] (Y. Alaruikka, Reindeer Breeding Among the Finno-Ugric Tribes.)

Melting snow poses a hazard, however, for should it remain cold for a long period a hard crust forms over the ground and the forage available is soon consumed.

From late September to early November is the rutting season for reindeer in Finnmark. As with calving there are definite areas where a particular herd has its mating grounds and it is no less important that they reach these at the proper time. The animals are restless and their movements widespread; favourable terrain is that which allows the animals freedom of movement while naturally containing the herd with little need for interference from the herders.

Where it was thought practical, sites were selected for the establishment of storehouses for the seasonal change-over of equipment.

In many instances this was made unnecessary by the presence of a Settled Lapp family or Norwegian family with whom the nomads could leave their unwanted equipment. In return for this favour the Mountain Lapp would supply fresh meat in the autumn and tend the reindeer of the farmer, or Settled Lapp. By this means an interdependence frequently developed between Mountain Lapp and Settled Lapp or Norwegian farmer (a sample case of this is cited in Chapter IV).

Nowadays the introduction of new roads, communications and utilization of modern means of transportation has, in many areas, meant the dislocation of the former migratory routes of the sii'da families. By and large this has not been the case for the herds, which today still traverse the ancient migration routes but, generally speaking, families now remain in fixed settlements and only the herders maintain close contact with the herds.

One may conclude by saying that the Mountain Lapp traditionally has adjusted his annual schedule to the rhythm of the seasonal movements of the reindeer. The extent to which he submitted to the demanding cycle of migrations was probably greatest, according to Ruong, in the one hundred years between 1750-1850 when it could be said that

nomadism in Lapland reached its fullest development.³²

B. The Emergence of the Mountain Lapp Reindeer Economy in Finnmark

1. Finnmark before 1886

The present administrative boundary dividing Troms and Finnmark was drawn in 1886. Prior to this date the two provinces were combined and known as "Finnmarkens Amt." Finnmark then stretched to the present boundary of Nordland province. Much earlier, and according to a statement of Ohthere, the great fjord, Malangen, south of Tromsø probably constituted the southern boundary of the province.³³ To the north, ancient Finnmark included northern Finland and the Kola Peninsula, so that the province was perhaps eight times its present size. No borders separated the northern region of Finnmark from neighbouring countries. Instead, Fellesdistrikter, or "Common districts," demarcated areas of joint interest. The western tract, now the municipalities of Kautokeino, Karasjok and Polmak, was a Norwegian-Swedish Fellesdistrikter; the eastern tract, Neiden, Pasvik and Peisen (Russian Petsjenga, Finnish Petsamo), was acknowledged

³²I. Ruong, "Types of Settlement and Types of Husbandry Among the Lapps in Northern Sweden," Arctica, Studia Ethnographica Upsaliensia XI, Uppsala, 1956, p.108.

³³H. Vreim, "The Ancient Settlements in Finnmark, Norway," Folkliv, Stockholm, 1937, p.169.

to be a Norwegian-Russian Fellesdistrikter from 1326 to 1826.³⁴ Inari, in the middle, was a Norwegian-Swedish Fellesdistrikter until 1751, at which time the present northern boundary of Norway and Sweden was fixed by treaty. Under the terms of the treaty the Fellesdistrikter between Norway and Sweden was divided: Norway retained Kautokeino, Karasjok and Polmak, but relinquished Utsjok and Inari. In 1826 the Norwegian-Russian Fellesdistrikter was similarly apportioned: Norway surrendered all Peisen to Russia but kept Neiden; Pasvik was divided by the new border.

2. Early Evidence of a Developing Nomadism

When Johannes Torneus in his "Manuale Lapponicum" (ca. 1752) remarked that "to the Lapps the reindeer is more valuable and useful than any other animal is to any other people on earth," he was probably referring to the Mountain Lapps. According to late seventeenth century accounts there was then little difference in the way of life of Coast and Mountain Lapp. Both depended upon small herds of reindeer for draught and decoy purposes and hunted wild reindeer and other game. It was only when the abundance of wild reindeer diminished that the limited husbandry of the Lapps living in the interior of Finnmark expanded into an extensive form of pastoralism with migrations

³⁴The former municipality (kommune) of Polmak was united with Tana municipality in January 1964 to form the single Tana municipality.

reaching as far as the Finnmark coast.³⁵

The advance of Mountain Lapp groups into the coastal territories posed a threat to the Coast Lapp people, for the nomads with their larger herds frightened away the wild reindeer and consumed pastures which the Coast Lapps had customarily used for their own small herds. A direct result of the expanded nomadism of the Mountain Lapp was the gradual elimination of the reindeer from the Coast Lapp economy which Paine suggests took place over the hundred years between 1650 and 1750. He writes, "the most probable direct cause . . . lay in the reversal of the proportions of the Lappish reindeer culture in the interior of Finnmark and to the east."³⁶ The appearance at the coast of nomads (flyttsamer) from the interior had been reported as early as the mid-1500s. However, the nomads in question were a small number of Kautokeino Lapps who made summer fishing excursions to the coast and at the time did not bring their reindeer with them.³⁷ It appears the nomads began to drive their herds to the coast toward the end of the fifteenth century and by the end of the seven-

³⁵ Several sources (K. Birket-Smith, G. Gjessing) mention the introduction of the rifle as an element hastening the demise of the wild reindeer.

³⁶ Paine, op. cit., p. 32.

³⁷ A. Steen, Kautokeinostudier, Samiske Samlinger, Vol. 3, Utgitt av Norske Folkemuseum, Oslo, 1956, p. 74.

teenth century, according to Solberg, had extended their nomadic activities to include all but the offshore islands of Finnmark.³⁸ During the years 1650-1750 there were numerous complaints from Coast Lapps that the nomads were encroaching upon traditional Coast Lapp grazing territories and wild reindeer--still an important item of the Coast Lapp economy--were steadily being driven away.

3. Expansion of Norwegian Settlement and the Decline of Wild Reindeer

The invasion by the Mountain Lapps (in summer) of the grazing lands of the Coast Lapp and the adoption of reindeer nomadism as a means of subsistence may reasonably be attributed to the expansion of Norwegian settlement into Finnmark accompanying the growth of the rich Finnmark fishery. The establishment of permanent Norwegian settlement in Finnmark probably began in the thirteenth century. Tax lists (before 1700) and census data (after 1700) provide a fairly clear picture of the extent of early immigration into the colony (Table V).³⁹

³⁸Paine, op. cit., p.33.

³⁹G. Gjessing, Changing Lapps, Monographs on Social Anthropology, No. 13, The London School of Economics and Political Science, London, 1954, p.14. At this time Finnmark was looked upon as having somewhat the status of a colony. For a period (1751-1812) the sagging population of Finnmark was bolstered by the forced immigration of convicts.

Table V--Population of Finnmark, 1520-1805

Year	Norwegian Families	Coast Lapp Families
1520	356	--
1567	506	154
1593	--	173
1598	--	208
1667	385	206
1690	515	290
1717	449	272*
1767	329	668
1805	290	901

Source: R. Paine, Coast Lapp Society I, p. 26.

*Also 69 Mountain Lapp families (total 341 families).

The new immigrants came from the south and east, and as Table V shows, their numbers increased--though irregularly--during the period of Free Trade, that is, the period before the monopolization of the Finnmark fishery by the Bergen Trade Monopoly.⁴⁰ Upon the imposition of the Monopoly, however, a steady decline in the Norwegian population ensued. . .

The Bergen Monopoly, the hard colonial conditions and the refusal of the State to sell land rights, greatly diminished the chances of obtaining a conscientious and durable Norwegian settlement. . . while the Lappish population in Finnmark increased steadily and in 1805 had reached six times its 1567 total, the Norwegian population shows no steady tendency and in 1805 its number was nearly half what it had been in 1567.⁴¹

⁴⁰The Bergen Trade Monopoly was composed of merchants in Bergen and Trondheim who, by Royal assent, were given sole control over trading in Finnmark. The monopoly was imposed in 1562.

⁴¹Paine, op. cit., p. 31.

Thus the Norwegian population was deprived of economic incentive and this fact alone, coupled with drownings at sea and the inroads of epidemics, rendered the meagre inflow of immigrants from the south inadequate to expand or even sustain the existing population.

While to a degree suffering much the same fate as the Norwegians, the Coast Lapp population did not diminish because of its replenishment by Lapp immigration from the interior. They did, however--and particularly the Coast Lapps--absorb the impact of the subsequent influx of displaced Finns, beginning in the year 1711 and reaching its greatest during the depression years, 1860-1867 in Finland. At the onset of a more persistent Norwegian settlement during the latter half of the seventeenth century, parts of West Finnmark were largely settled and the new immigrants from the south and east took up residence along the coast of East Finnmark (Figure 7). Long before this time, however, Norwegian encroachment upon Coast Lapp hunting grounds had introduced the Lapps to their first encounter with another culture.

Norwegian settlement of the offshore islands and their clearing of the inner fjords motivated a progressive retreat of the Coast Lapps towards the heads of the fjords; concomitantly, abandonment of Coast Lapp transhumance ensued and a settled way of life with rudi-

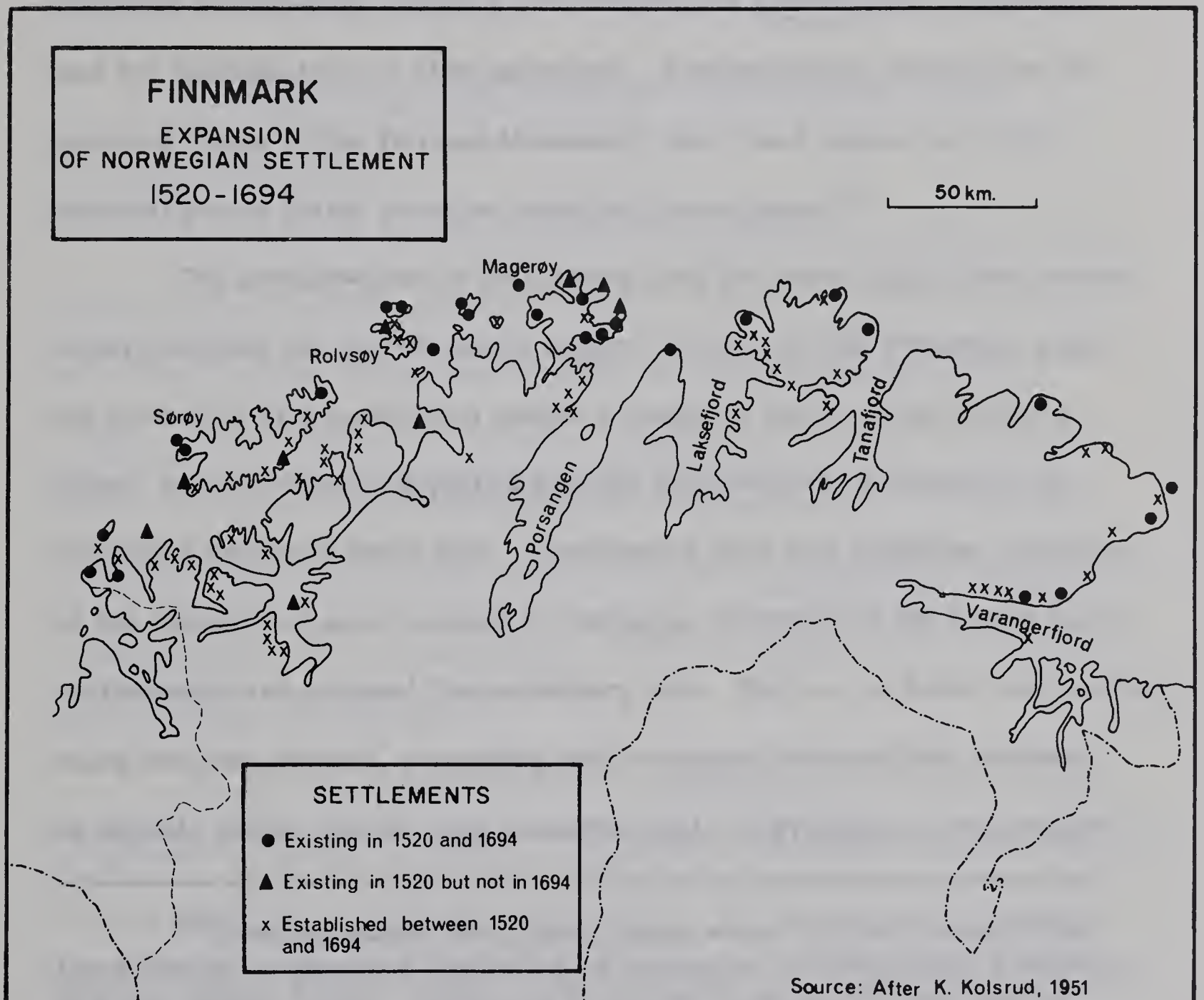


Figure 7

mentary agriculture was adopted.⁴² The assumption of a more sedentary existence had a salutary effect on the Coast Lapp situation in Finnmark for it contributed to the establishment of a cottage industry centered around boat building, the weaving of grener (wool blankets) and the manufacture of skin garments. Consequently, during the depressed times of the Bergen Monopoly, the Coast Lapps were economically in a better position than the Norwegians.⁴³

The advancement of settlement into the inner fjords had serious repercussions for the Mountain Lapps; stocks of wild reindeer, under the pressure of a population unable to support itself on agriculture alone, were seriously depleted and the introduction of firearms undoubtedly hastened their end. Confronted with this situation, numbers of the Mountain Lapps, unable to compete, migrated to the Coast Lapp settlements and adopted the sedentary life. But, as we have seen earlier, many did not; instead, expanding their domestication of the reindeer to include larger herds, they extended their migrations to encompass

⁴²Gjessing states the Coast Lapps were "driven" toward the fjord-heads, suggesting expulsion by pressure of settlement, possibly, in some cases, force. Paine, on the other hand, attributes the retreat to the Lapps' general habit of avoiding company other than their own. In either case, the results were the same. (Gjessing, op. cit., p. 15; Paine, op. cit., p. 37.)

⁴³Not infrequently insufficient supplies from Bergen and Trondheim reached the dependent Norwegian settlers, often causing suffering and near-starvation. The Lapps, being self-sufficient, were not dependent on the whims of the merchants in the south.

the islands and coastal districts. Thus the reconstitution of Coast Lapp and Mountain Lapp economies and the associated geographical readjustment may be said to have been the product of culture contact, the result of expanding Norwegian settlement in Finnmark.

C. Early Mountain Lapp Settlements and Reindeer Herds

1. First Settlements

It is difficult to give anything but approximations for the number of nomad families and their reindeer before the 1800s; similarly, one cannot speak of Lapp settlements on Finnmarksvidda until the 1700s. First mention of "villages" (landsbyer) appears in Christian III's "Instrux for Underhandling on Fieldlapperne 1613," wherein it is stated that to "Sørfjellet" belong "Kodeke (Kautokeino), Lappejaffver (Lappojavrre), Aduer (Avjovarre), Eskilsby (Teno), Arvidzby (Utsjok) and Indiaffuer (not known).⁴⁴

In 1553 there were twenty-five skattlapper (tax-paying Lapps) in the three villages of Kodeke, Lappejaffver and Aduer (eight in Kodeke, six in Lappejaffver and eleven in Aduer). On the basis of six people per household (the average for the censuses of 1741 and 1801) the individual villages contained populations of sixty-six, thirty-six and forty-eight persons respectively, or, altogether 150-160 persons in an area

⁴⁴P. L. Smith, Kautokeino og Kautokeino Lappene, Instituttet for Sammenlignende Kulturforskning, Oslo, 1938, p. 3.

of approximately 17,000 square kilometers.⁴⁵ However, these clusters could scarcely be considered settlements for they merely represented small encampments of Lapps who from time to time foregathered at these sites on ecclesiastical, judicial or administrative occasions.

An indication of the growth of the Lapp population in Kautokeino and Avjovarre may be determined from Table VI based upon the number of Skattlapper recorded in the Jordboken (tax registry) for the years between 1702 and 1751.

Table VI--Registered Tax-paying Lapps in Kautokeino and Avjovarre, 1702-1751

Year	Kautokeino	Avjovarre
	Tax-payers	Tax-payers
1702	23	13
1715	26	4
1720	26	4
1730	26	12
1735	33	12
1741	37	18
1751	48	18

Source: P. L. Smith, Kautokeino og Kautokeino Lappene, 1938, p. 110.

In 1717 a missionary, Thomas von Weston, estimated there were sixty-nine Mountain Lapp families living in Finnmark, or approxi-

⁴⁵Ibid., p. 6. (Including the inner half of present-day Troms province and inner Finnmark reaching to the Tana River east to the Finnish border.)

mately 414 individuals (See Table V). Of the sixty-nine families, he recorded sixteen of them in the Varanger Peninsula region of eastern Finnmark and stated that their encampments lay between Polmak, Neiden and Varanger, while in summer they moved to Varangerbotn in order to fish.⁴⁶ Included in his report was mention of the family herds which he observed to be very large, sometimes numbering in the thousands.⁴⁷

The census for 1741 lists forty-six husstander (households) comprising 234 persons in Kautokeino; Avjovarre, in the same year, had thirty-one households or 159 individuals. Together, Kautokeino and Avjovarre contained approximately seventy-seven households with a total of 393 individuals. By comparison, 140 years earlier (1601), Kautokeino and Lappojavrre had thirty-two households and Avjovarre twenty-five, making a total of fifty-seven households (183 persons in Kautokeino and Lappojavrre, 128 persons in Avjovarre, or an aggregate of 291 persons.)⁴⁸ Also included in the census report of 1741 were the locations of the tracts where the Lapps had their fall, winter and spring pastures. An interesting disclosure was the comment that the Lapps had already begun to look upon the pastures

⁴⁶Paine, op.cit., p. 24.

⁴⁷Loc. cit.

⁴⁸Smith, op.cit., pp. 111-112.

as their own, and, the report continued, in all likelihood some control over the Lapps and their herds would soon be necessary. The presence of large herds was, however, apparently limited, and hunting--especially wild reindeer (with guns)--combined with fishing and bartering still characterized the indigenous economy. Indeed, up until at least the mid-eighteenth century only the most wealthy Lapps--wealthy in numbers of reindeer--could subsist without fishing and hunting. Solem, in his description of primitive Lappish law, "Lappiske Rettstudier" remarked that in Kautokeino the Lapps, in 1740, were still moving. . .

Hither and thither in order to seek food in some fashion, for hardly anyone was wealthy enough to sustain himself and his household solely by his reindeer.⁴⁹

Considerable disparity in the distribution of reindeer was revealed in the census of 1753, which indicated that sixty-four men of one particular locality jointly owned 4,860 reindeer, the richest having 300, sixteen having between 100 and 250 and the remainder owning between 20 and 100.⁵⁰

Concerning the nature of Mountain Lapp life in Finnmark in

⁴⁹ E. Solem, Lappiske Rettstudier, Instituttet for Sammenlignende Kulturforskning, Serie B., XXIV, Oslo, 1933 in Lowie, op. cit., p. 449.

⁵⁰ Lowie, op. cit., p. 449.

and around 1741, we have the observations of the Kautokeino priest, Johan Junnelius. According to Junnelius, the Lapps moved to the coast in summer and lived mainly on fish. Such a journey from Kautokeino involved a distance of 16-20 Norwegian miles; from Avjovarre the distance was 12-16 Norwegian miles and from Utsjok, for a period annexed to Kautokeino, a matter of 6-10 miles.⁵¹ Once they had reached the Norwegian coast the Lapps spread out over a distance of sixty Norwegian miles or more. Those Lapps that did not migrate reportedly camped sixteen or twenty miles inland from Kautokeino.⁵²

2. Intensive Reindeer Husbandry

Until the cash sale of reindeer meat and hides became the dominant motive of Lapp reindeer husbandry the reindeer were husdyr, meaning animals for the provision of milk (for cheese), meat, hides (for clothing) and for transport and draught purposes. In the early stages of reindeer breeding, the reindeer were also used as decoy animals for hunting wild reindeer.

The customary method of reindeer herding employed by the nomads was the so-called intensive system. Characteristic of the intensive herding system was almost total utilization of the animal

⁵¹One Norwegian mile equals ten kilometres or approximately 6.3 English miles.

⁵²Smith, op. cit., p. 114.

for subsistence, which included daily milking of the does, and the use of reindeer as draught and pack animals. Dependence upon the reindeer to this degree required the Lapps to maintain close supervision over the activities of the herd and to be constantly on the watch for anything which might endanger the animals. Under these conditions family and herd moved frequently, and the common shelter was the special Lapp tent, or goatte in Lappish.

The nomadic life of the Mountain Lapp precluded the erection of permanent dwellings. However, as migration routes became more firmly set it was possible for some families to build semi-permanent shelters--often a gamme or turf-covered framework--near the winter and summer grazing territories. But the choice of buildingsuch a shelter depended very much upon the accessibility of building materials (poles, peat) at the camp sites and in view of the ease with which a tent could be erected (and its considerable comforts) many Lapp families continued to use the serviceable Lapp tent. In determining the location of a tent or other shelter the availability of fuel and fresh water was of paramount importance. Particularly was this the case where the winter site was concerned, and consequently the family tent (or other shelter) and herd were often widely separated so that tending of the reindeer was entrusted to herders who remained with the herd for long intervals. Frequently, therefore, the

family tent would remain within the tree-zone while the herd would be driven to higher elevations where lichen or green forage was more abundant.

The need for more definite migration routes arose as a result of the growth of herds. In order to avoid the mixing of herds and the overgrazing of forage, it became necessary for each herd to adhere to a particular route. In this connection it seems that, up to 1700, the ancient character of the sii'dâ was maintained with the herd communally owned and managed and little or no individual ownership of animals. Later, as herds increased in size, the extended migrations became more difficult because of competition for grazing areas. This forced the division of the sii'dât into smaller migratory groups and the evolution of individual animal ownership.

3. The Reindeer Herds

The following figures concerning the number of reindeer in certain districts of Lapland appeared in an account written by A. Hackzell dated March 17, 1750.⁵³ The reindeer population for forty Lapps living in Kautokeino was given as 4,000, an average of approximately 100 animals per household. Avjovarre, on the other hand, with eighteen Lapps and 1,100 reindeer had an average of only sixty-one animals per household. Utsjok, with thirty-five Lapps and 4,400 reindeer

⁵³ Ibid., p. 116.

had the highest average with 125 animals per household. Elsewhere, Hackzell estimated there were 10,000 reindeer spread amongst 150 Lapps in Jukkasjärvi or, an average of sixty-seven per household. The sixty Lapps in Enontekiö (Finland), according to Hackzell, had 5,000 reindeer, an average of eighty-three per household.⁵⁴ In comparison, the reindeer population of the Swedish Lappmark of Kemi was small.

While seemingly ready to answer questions concerning the number of reindeer they owned, Hackzell was aware that the Lapps intentionally gave misleading information, and he surmised that the totals were fifty per cent greater than actually reported.⁵⁵ He felt this opinion to be supported by his discovery of a large herd of Norwegian Reindeer wintering around Kautokeino, Avjovarre and Utsjok--as large as he had observed in Jukkasjärvi and Enontekiö. The explanation seemed to be that the Lapps rather cunningly were dividing their herds and moving them about in such a way as to deceive any observer as to their real numbers.

Of the large herd Hackzell observed during the winter around Kautokeino, 2,000 of the animals, he believed, belonged to Norwegian Lapps, as did another 3,000 counted near Avjovarre. These 5,000 ani-

⁵⁴Loc. cit.

⁵⁵Ibid., p. 117.

mals were accompanied by their owners (thirty-one households), who, Hackzell felt, were probably Mountain Lapps from Masi, Porsanger and Masøya. On the other hand, in Utsjok, he counted a total of 5,460 Norwegian reindeer with twenty households, all Varanger Lapps.⁵⁶

Shortly after 1746-1742 an outbreak of anthrax (Nor. miltbrand, Lappish râd'dë), which first appeared in Jukkasjärvi, spread rapidly through the reindeer herds of the north infesting Kautokeino and causing widespread decimation of the herds.⁵⁷

⁵⁶ Ibid., p. 119.

⁵⁷ Ibid., p. 120.

CHAPTER IV

THE LATER PERIOD (From 1750 to Present)

A. Changes in the Herding Pattern

1. Finnmark's Links with Norway Strengthened

Throughout the early history of Finnmark the region existed in a condition of political detachment from the rest of Norway. Remote and imperfectly known, Finnmark was visited only by traders who ventured northward to barter with the Lapps and to collect taxes from them. The Lapps, therefore, had almost complete freedom of movement, though the expansion northward of Norwegian settlement had a very pronounced influence upon Lappish settlement: the Coast Lapps became more and more confined to the inner fjords and coastal fringe and the Mountain Lapps, inhabiting the interior of Finnmark, developed conditions of an extensive pastoralism.

Events of the nineteenth century, however, ended the former laissez-faire attitude toward Finnmark and it became the focus of increasing attention. New interest was awakened by the realization that the province held decided commercial possibilities; and this in turn stimulated renewed immigration from the south and Finland. Improved transport connections from 1838 onwards helped considerably to strengthen the former loose bonds the region held with the rest of

the country. One of the first manifestations of closer links with the south was the inauguration, in 1838, of a North Norway service provided by the paddle-wheel steamer "Prins Gustav."¹ At first Hammerfest was the most northerly port of call. Not long afterwards, in 1853, a fortnightly service between Tromsø and Vardø linked East Finnmark as well to the rest of the country.

2. The Dislocation of Migrations by Russian Border Closures

In 1751 the present boundary between Sweden and Norway was agreed upon and fixed by treaty. Concluded between the United Kingdom of Denmark-Norway and the Kingdom of Sweden (then including Finland), the treaty raised no obstruction to the migrations of the Lapps and their herds over the frontier, and a codicil to the treaty expressly upheld this right according to ancient usage.² Accordingly, Swedish Lapps with their reindeer continued to move into Norway to summer pastures and similarly Norwegian Lapps moved into Sweden and Finland during the winter.

¹ J. Falkenberg, Bosetningen ved Indre Laksefjord i Finnmark, Bidrag til Finnernes Bygdhistorie og Etnografi, Nordnorske Samlinger, Utgitt av Etnografisk Museum II, Oslo, 1941, pp. 81-82.

² J. G. Elbo, "Lapp Reindeer Movements Across the Frontiers of Northern Scandinavia," The Polar Record, Vol. 6, No. 43, January 1952, p. 348. It is interesting that this condition was respected by the German occupation forces during World War Two.

A serious dislocation of the traditional Lapp migrations across the Finnish frontier came with the Russian decision, in 1852, to close the Norwegian-Finnish border.* The Russian action was retaliatory, prompted by a Norwegian refusal to recognize Russian claims to extensive fishing rights along the Norwegian coast. In order to continue their customary use of the pastures in Finland, therefore, Norwegian Lapps and their herds emigrated from Kautokeino to Karesuando (Sweden) and Enontekiö (Finland). Consequently, between the years 1853 to 1871 sixty-nine Kautokeino families (274 individuals) with 20,914 reindeer, emigrated to Karesuando, and from 1855 to 1880 199 Kautokeino Lapps, with 6,420 animals, moved into Enontekiö.³ In 1889 the Russians closed the Finnish-Swedish border to Lapp migrations, cutting the Lapps off forever from their ancient pastures in Finland.⁴ This final closure caused a number of Finnish Lapps to move to Karesuando, adding to the immigrant nomads there from Kautokeino, and ultimately causing such overcrowding in Karesuando that a dispersal of Lapps southward to Jokkmokk parish (Lule Lappmark), Gällivare and Jukkasjärvi ensued. Of the

* Finland was lost to Russia by Sweden in 1809.

³ G. Gjessing, Changing Lapps. Monographs on Social Anthropology No. 13, The London School of Economics and Political Science, London, 1954, p. 58.

⁴ Elbo, op. cit., p. 350.

Kautokeino immigrants not all remained, and between the years 1877-1897, forty-six families returned to Kautokeino.⁵ The Russian border closure thus had grave consequences for traditional Lapp reindeer movements, which up until 1889 had ignored national boundaries.

In view of the disruption of migrations caused by the border closures, the Lapp codicil of 1751 was revised in 1883 giving rise to the first "Common law" or Felleslappeloven (Act Relating to the Lapps in the United Kingdom of Norway and Sweden). Norway and Sweden agreed to permit Swedish herds to migrate to Troms and Nordland provinces for the summer grazing and Norwegian herds from Troms, Nordland and Nord-Trøndelag were given corresponding winter grazing privileges in Sweden. In 1919, after thorough investigation, the first Felleslappeloven was revised. Subsequently the law was revised and renewed several times, the latest being in 1959.

Administration of reindeer herding in Norway originally was in accordance with the "Common law" of 1883, the "Act on Sundry Matters Relating to the Mountain Finns (Lapps) in the County of Finnmark" of 1888 and an Act of 1897 relating to the reindeer industry

⁵ Kirke og Undervisningsdepartementet, Innstilling fra Komiteen til å utrede Samespørsmål, Mysen, 1959, p. 12.

south of Finnmark. After repeated modifications and re-enactments, a new Act (Lov om Reindriften) was passed in 1933 and enforced in 1935.

3. Intensive to Extensive Reindeer Herding

Of considerable economic importance to Finnmark was the so-called Russian Trade. The Russian Trade was officially declared legitimate in 1796 and remained a part of the economic life of Finnmark until the Russian Revolution brought an end to it in 1917. In the beginning the Trade was conducted as a simple and exclusive barter between Russian traders and coast residents of Finnmark. The Traders came yearly aboard Russian schooners, at first to the Varanger region, extending their activities later to include the small Norwegian ports and offshore islands of West Finnmark. The Russians were interested solely in obtaining fish and for this traded grain and meal, flax and rope, planks and timber, ship chandlery and sundry other articles. In time, the yearly visits of the Russians (from 15th of June to the 30th of September) and their items of trade became the focus for much economic activity along coastal Finnmark and the Trade was instrumental in attracting new immigrants from the south and Finland.

The withdrawal of the Russian Trade in 1917, therefore, created a financial depression among the fjord people that was remembered

long afterward. Unlike the Coast Lapps, however, the Mountain Lapps, in view of their economic self-sufficiency, were able, by and large, to remain aloof from the economic influences of the Russian Trade. But although not dependent upon the Trade for their livelihood, the Mountain Lapps frequently engaged in barter with the Russians. On the other hand, the Coast Lapps increasingly relied upon the yearly visits of the Russians and by 1890 had begun to replace barter with the exchange of money.

Toward the end of the nineteenth century, commercialism in Finnmark had made inroads into the subsistence economy of the Lapps. Expanding settlement and consequently a wider market for reindeer meat and hides encouraged the nomads to abandon the rigours of intensive herding for the easier and more practicable extensive herding, which lent itself to commercial reindeer breeding. With the new emphasis upon meat production the adoption of extensive herding methods allowed for larger herds and, by permitting the animals greater freedom of movement, contributed toward a stronger and more thrifty animal. The abandonment of milking meant that there was more for the calves, and this too aided in improving the general condition of the herds.

Up until this time intensive herding had been the method of herd management. This entailed keeping small herds under close

supervision, regular contact between family and herd, daily milking of the does, and full utilization of the animals for subsistence. Generally speaking, this was the nature of Mountain Lapp reindeer management up until World War One. However, after the war, and under the influence of the increasingly commercialized Norwegian economic system, a transition developed from the intensive method to the extensive. The extent to which extensive herding became widespread in Finnmark by the latter half of the nineteenth century is difficult to measure. It seems likely that the change-over to extensive herding probably took place by degrees from one herd to the next and its adoption depended very much upon local influences. In the case of the Kautokeino herds, however, there is strong evidence to support the conclusion that extensive herding had been employed there long before the turn of the century. One source of information is the report of Karesuando Lapps who spoke of the Kautokeino immigrants using extensive herding when they came to Karesuando after the border closures of 1852. Smith, in his account of Kautokeino, remarks that "the less intensive management--less milking--that one found there [Kautokeino] in 1860 demanded less people than a herd of equal size in the years 1740-1750."⁶ He gives as an example

⁶P. L. Smith, Kautokeino og Kautokeino Lappene, Instituttet for Sammenlignende Kulturforskning, Oslo, 1938, p. 117.

of the decline in intensive herding in Kautokeino, the case of Kautokeino's largest reindeer breeder in 1865, Aslach Mathisen Logje.

A man of seventy years of age at the time, Logje had a herd of 2,500 under the care of five people, four of whom were young girls.⁷

Whatever the method of herding employed, the numbers of reindeer in Finnmark quite definitely increased during the nineteenth century (Table VII) as did the average number of animals per person (Table VIII). The figures in Table VII are in certain measure indicative of the state of Lappish affairs in Finnmark over the period between 1800 and 1900. In 1855, for example, the reindeer total reached a peak figure of 83,600, mainly because the closure of the Finnish border had forced those Lapps who normally used the Finnish winter pastures to remain in Finnmark.* The decline in numbers after 1855 followed the departure of the Kautokeino herds for Karesuando and Enontekiö. Once this was complete the numbers remained stable for several decades until gradually a second peak figure was reached in 1891. The decrease in the final decade of the nineteenth century can be attributed to a severe outbreak of anthrax among the Finnmark herds (and elsewhere in Lapland) and to the fact that the Lapps, finding a

⁷Loc. cit.

*It had also become prestigious at the time to own a large herd.

ready and ill-controlled market for their meat and hides, proceeded to slaughter their animals in quantity. It was also a period, as Gjessing remarks, when "a wave of reindeer thefts. . . made it risky to maintain such large herds as at the middle of the century."⁸

Table VII--Reindeer Population in Finnmark,
ca. 1800-1900

Year	Reindeer
1800	60,000-70,000
1835	74,000
1845	71,300
1855	83,600
1865	65,300
1891	96,700
1900	74,400

Source: G. Gjessing, Changing Lapps, London, 1954.

Table VIII--Average Number of Reindeer per Individual
and Household in Finnmark, 1845-1900

Year	Average Per Person	Average Per Family
1845	58	290
1855	63	315
1865	66	330
1875	72	360
1890	93	465
1900	83	415

Source: Tidsskrift for Det Norske Landbruk, No. 1-2, 1964, p. 8.

⁸Gjessing, op. cit., p. 58.

4. The Geographic Implications of Extensive Herding

Vorren has reported the case-history of a family in the Helgeland district of Nordland province.⁹ It serves as an example of the consequences of the transition from a subsistence economy based upon reindeer herding to a monetary economy.

The family in question, up until 1919, employed all the old herding practices: the whole family accompanied the herd and was entirely involved in work with the herd, milking and cheese-making were important, and as many as possible of the products of the animal were utilized by the family. With the passing of the older generation (in 1919) these activities ceased and the character of the traditional economy began to change. Instrumental in bringing about the change was the purchase of a farm by the younger generation so that the family was able to live permanently in one place, with only the herders accompanying the reindeer. The family, no longer in close touch with the herd, stopped milking the reindeer and comprehensive use of the animal products diminished as well. The function of the herd then shifted gradually from a purely subsistence role to a commercial role. In other words, the products of the herd were for cash sale, and the family economy

⁹Ø. Vorren, "Reindeer Nomadism in the Island Region of Helgeland," reprint from Studia Ethnographica Upsaliensa, Vol. XXI, pp. 304-320.

was increasingly money-oriented. The herding pattern was correspondingly affected because of this, so that in order to obtain a sufficiently high yield of meat and hides from the herd, the numbers of reindeer had to be substantially increased. This was only possible if the pastures were systematically and rationally utilized--in a way unnecessary under the former intensive herding. Vorren comments that "there must have existed a close connection between the land use pattern and the development of the breeding pattern and economy."¹⁰ In other words, the intensive herding associated with a subsistence economy and a relatively extensive and irrational use of land (wide pasture areas connected by long migration routes) was no longer able to supply the requirements of the new commercial reindeer breeding which demanded larger herds. In practice this meant increasing the "carrying capacities" of the pastures by utilizing new parts and by intensifying the use of old ones. Eventually, by 1939, the herd consisted of 1,000 animals; it was at this time that the herder decided to sell all his animals.

B. Population and Settlement

In the case of the herder from Helgeland, the decision to sell the herd made it possible for the new generation to enter Norwegian society. By so doing the family had effected the transition from full nomadism to semi-nomadism to residence in the short span of twenty

¹⁰Ibid., p. 316.

years. The latter step had been made relatively easy because, over the period of years between 1919 and 1939, an interdependence between the settled peasant society and the nomads had lead to mutual understanding and respect.

It is not intended that the foregoing example of the family in Nordland should be thought of as being the fate of the Finnmark nomads. On the contrary, probably few of the nomads wanted to surrender their traditional way of life, even if it had been possible to do so. On the other hand, the integration of the Helgeland family into the larger Norwegian community was symptomatic of processes which had become noticeable around the turn of the century, and especially so in the decades following, namely the growth and "Norwegianization" of the Lappish-speaking population. Both aspects in turn had repercussions for Lappish settlement.

1. The Strongholds of Lappish-speaking Population in Finnmark

The Lappish-speaking population is widely distributed over North Norway. Within historic times small groups of Lapps inhabited the fjords, mountains and hinterland stretching from Finnmark to Helgeland in Nordland. As early as the eighteenth century the coast Lapps in Nordland and Sør-Troms experienced the colonizing influence of the Norwegians and eventually became assimilated. Inland from this predominantly Norwegian fringe, small pockets of Lapps settled in

the forest regions of Nordland and Sør-Troms. These people had abandoned life in the mountain districts in order to settle near the rural districts of the coast. The same process occurred in Finnmark. There, however, the Lapps who forsook life in the mountains for a sedentary existence were able to enter the many Coast Lapp settlements, which from early times had existed along the fjords and coast of Finnmark. Evidently, at the conclusion of the nineteenth century, three principal geographical regions of Lappish-speaking population were discernible:

- 1) The comparatively isolated, Lappish settlements in the Mountain districts of Finnmark and in the valleys of Tana.
- 2) The Coast Lapp communities in the fjords of Finnmark and Nord-Troms.
- 3) The small rural districts of Lappish-speaking people inland from the Norwegian-speaking coastal settlements further south.¹¹

The three Lappish-speaking regions were affected differently by the presence of a predominantly Norwegian society. Groups 2 and 3, because they lacked cohesion, were unable to withstand the overwhelming presence of Norwegian-speaking communities. As a result, these small, dispersed Lapp communities, became strongly influenced by Norwegian culture. On the other hand, group 1, the

¹¹Kirke og Undervisningsdepartementet, op. cit., p. 21.

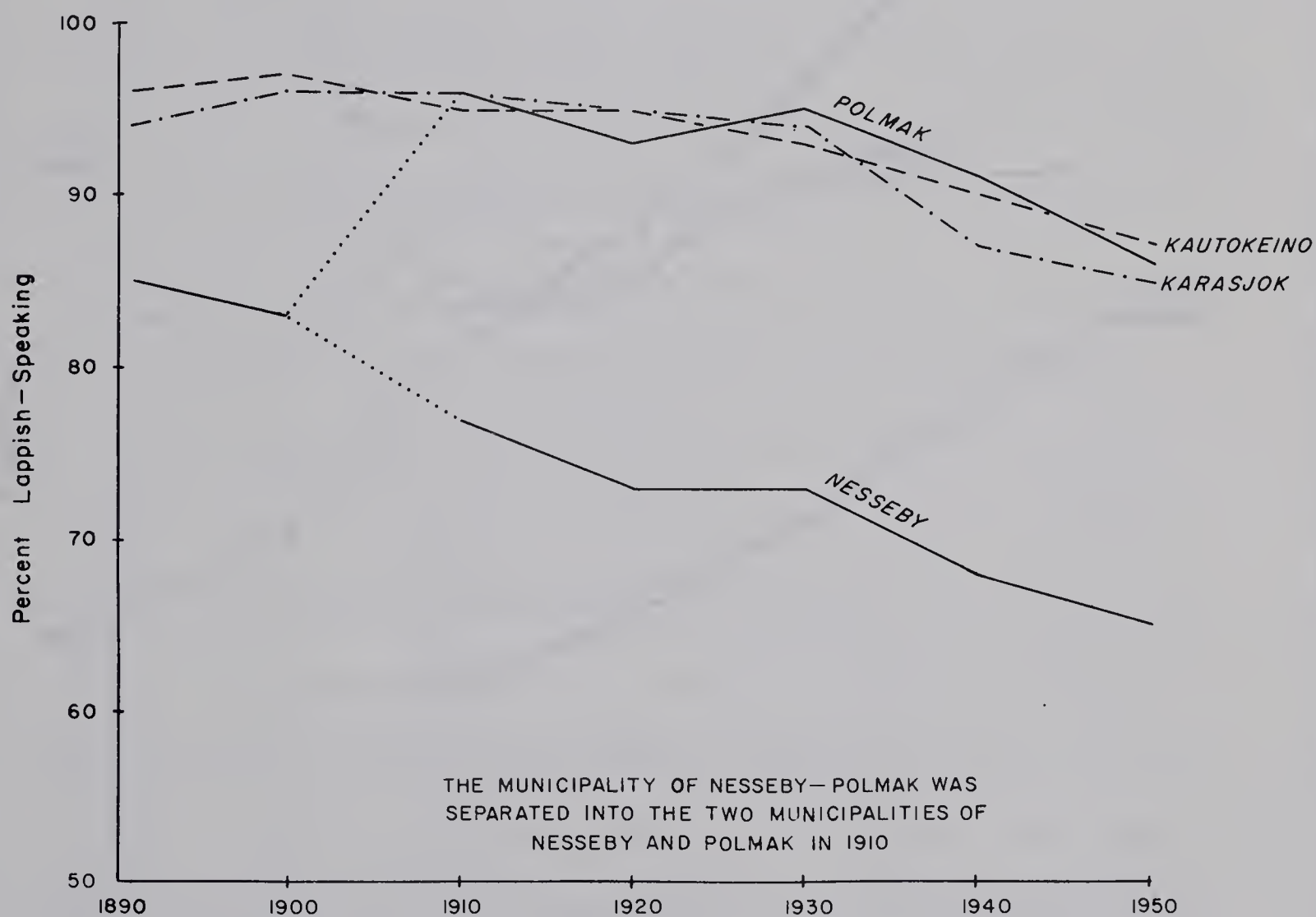
Lapp settlements of Finnmark and Tana experienced Norwegian influences to varying degrees. The consequences of this situation were twofold: in the case of the small, dispersed Lapp settlements near Norwegian settlements, there was a loss of Lapp identity and language. But the other Lapp rural communities, namely those in the municipalities of Kautokeino, Karasjok, Polmak and Nesseby in Finnmark, escaped domination in view of their relative isolation from Norwegian settlements. Accordingly, the Lapp population of these municipalities was able to maintain greater unity and the population expanded without a corresponding "Norwegianization." These municipalities came to represent the strongholds of the Lappish-speaking population in Finnmark.

2. The Growth of the Lappish-speaking Population, 1890-1950

The graphs in Figures 8 and 9 show the growth and proportion of the Lappish-speaking population in the four Finnmark municipalities (herreder)¹² containing a Lappish majority (see also Appendix B for the precise statistics). In each case it should be recognized that the values plotted embrace all types of Lapps and not merely the Mountain Lapps, which at all times have been a small minority in the total Lapp population of Norway. Furthermore, these are not

¹²In Norwegian the word herred (plural herreder) is best translated as "municipality" being a part of the larger administrative unit the fylke or "province." The term kommune is used interchangeably with herred.

FINNMARK
DEVELOPMENT OF LAPPISH POPULATION
IN MUNICIPALITIES WITH
LAPPISH-SPEAKING MAJORITY
1891 - 1950



Source: After Kirke og undervisningsdepartementet, Innstilling fra Komiteen til å utrede
samespørsmål, 1959

Figure 8

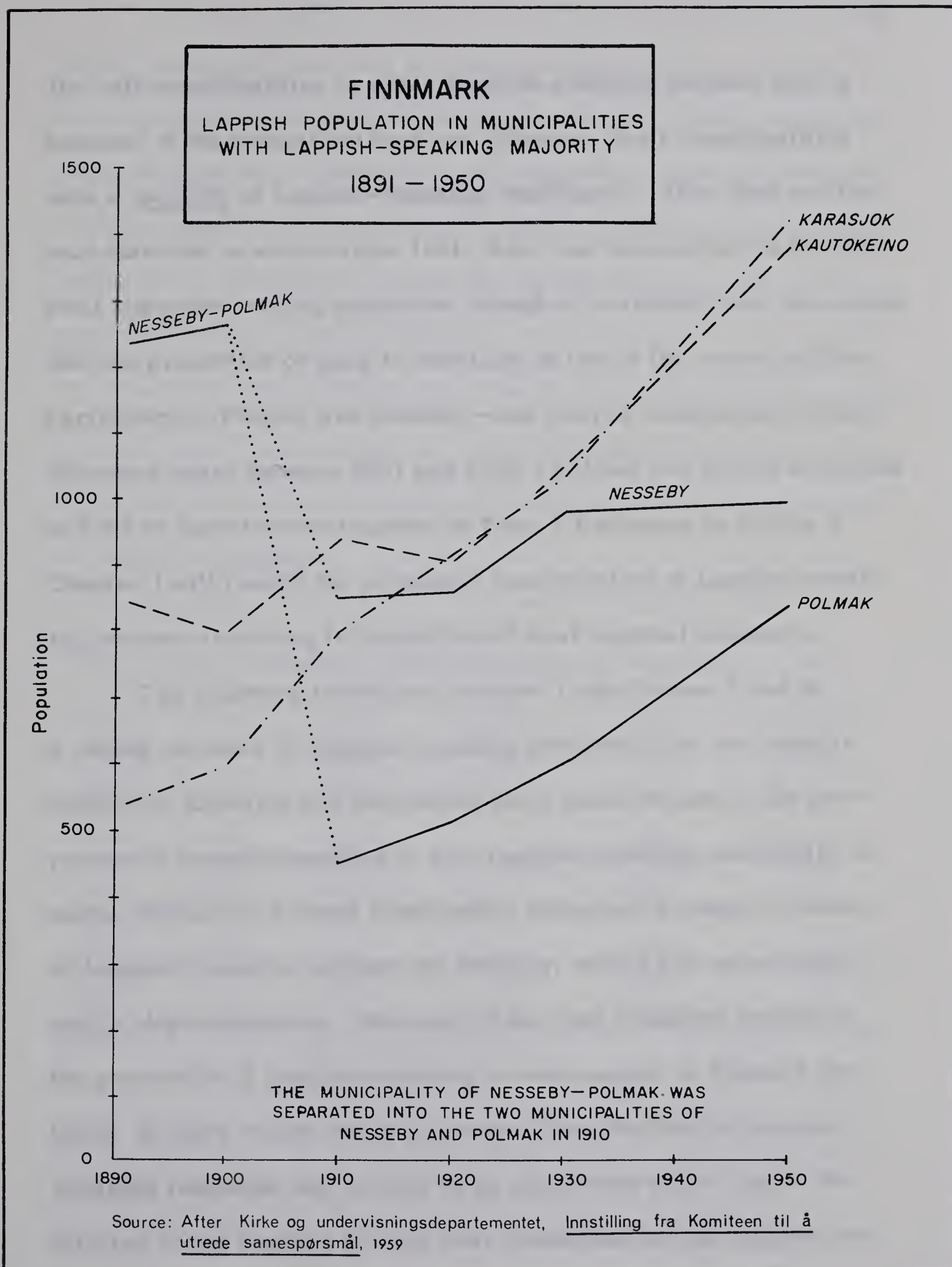


Figure 9

the only municipalities in which Lappish-speaking persons form a segment of the population; they are, however, those municipalities with a majority of Lappish-speaking inhabitants. Also, they are the only districts in which, since 1891, there has been an increase in the total Lappish-speaking population, though it is evident from the graphs that the proportion of Lapp to non-Lapp in two of the municipalities, particularly--Polmak and Nesseby--has altered considerably in the fifty-nine years between 1891 and 1950. (Polmak was united with Tana in 1964 to form the municipality of Tana.) Reference to Figure 6, Chapter I will clarify the provincial concentration of Lappish-speaking persons according to proportion of total regional population.

The following trends can be noted from Figures 8 and 9:

A strong increase in Lappish-speaking persons in the two municipalities of Karasjok and Kautokeino and a small decline in the proportion of Lappish-speaking to non-Lappish-speaking individuals in each. Similarly, Polmak municipality witnessed a steady increase in Lappish-speaking persons but Nesseby, after 1930, experienced only a slight expansion. However, there was a marked decline in the proportion of Lappish-speaking to non-Lappish in Nesseby district. In more recent years the proportional decline in Lappish-speaking residents may in part be an expression of the Lapps' desire for social reasons to deny their identification with Lappish society.

While the Lappish population clearly had increased in those districts where there was a Lappish-speaking majority, this was by no means the case where the contrary condition existed. But what was of far greater significance to the Lappish situation in Finnmark was the immense growth in the Norwegian population in the relatively short span of years between 1875 and 1930 (the last census in which any ethnic or linguistic distinctions were made). In the fifty-five years the total Lappish population had risen from 7,000 to approximately 10,500 (an increase of 3,500), while the Norwegian population in the same period grew from 9,800 to nearly 36,000, or an increase of 27,200 (Table IX).

Table IX--Population of Finnmark According to the
Censuses of 1875, 1891 and 1930

1875	Lapp	Kvaen ¹	Mixed	Norwegian	Total
Rural	7,008	2,865	2,628	6,387	18,888
Urban	9	1,421	337	3,420	5,187
Total	7,017	4,286	2,965	9,807	24,075
<u>1891</u>					
Rural	9,478	4,408	-	9,233	23,119
Urban	13	1,521	-	4,688	6,222
Total	9,491	5,929	-	13,921	29,341
<u>1930</u>					
Rural	10,400	4,638	1,378	27,762	44,178
Urban	47	900	50	8,133	9,130
Total	10,447	5,538	1,428	35,895	53,308

Source: R. Paine, Coast Lapp Society I, Tromsø Museums Skrifter, Vol. IV, 1957, p. 71.

¹Finnish-speaking immigrants, or Kvaens, began arriving in Finnmark early in the eighteenth century continuing throughout the nineteenth century. Fleeing from the ravages of war upon their homeland caused by the Great Nordic War, they looked upon Finnmark (and Norway) as a refuge, and settled first in West Finnmark but later, after 1850, more settled in East Finnmark than in West.

3. The Lapp Settlements of Karasjok and Kautokeino

The two principal centers of Lapp settlement in Finnmark are Karasjok and Kautokeino. Both settlements historically have had populations containing a large number of Mountain Lapps, though it is Kautokeino which represents the focus of Mountain Lapp settlement in Finnmark (and Norway). *

A study by the Norwegian, G. Gjessing (1954), of a representative Coast Lapp community, a Settled Lapp community and a Mountain Lapp community (namely, Laksefjord, Karasjok and Kautokeino) provides population data for the latter two settlements (Tables X and XI).

Table X--Settled and Mountain Lapps, Kautokeino

Year	Settled	Nomads	Total
1865	212	526	738
1900	267	522	789
1910	311	618	929

Source: G. Gjessing, Changing Lapps, London, 1954.

*Without access to early census material, it has only been possible to determine the Mountain Lapp component of either of the settlements by piecing together scattered figures from various sources.

Table XI--Settled and Mountain Lapps, Karasjok

Year	Settled	Nomads	Total
1865	?	?	586
1875	340	240	580
1900	397	191	588

Source: G. Gjessing, Changing Lapps, London, 1954.

Variations in the nature of the sites of Karasjok and Kautokeino led eventually to differences in the proportion of Settled Lapps to Mountain Lapps in the two predominantly Lapp communities. The establishment of a settlement at Karasjok was facilitated by the presence there of extensive pine forests. With this readily accessible source of building materials, the Mountain Lapps, early in the settlement of the area, began to construct log houses for permanent occupancy. Some families from Karasjok also built summer dwellings in the coast grazing territories. Nonetheless, as Nissen observed after his investigations of the Mountain Lapps in the first decades of the twentieth century, the Lapp tent (Lappish, goatte) was still the prevailing shelter at the time, though a tendency toward permanency of settlement was already discernible. By comparison, the situation at Kautokeino was entirely different. The absence of pine forests in the surrounding countryside precluded the ready construction of log buildings, and since logs for construction had therefore to be brought from Finland, no attempt was made to construct a build-

ing unless it was absolutely necessary, and then only of the minimum size. As a result, only a few Lapps, by Nissen's time, had chosen to build log houses, and the tent was in even greater evidence in Kautokeino than Karasjok. The following comment of Nissen is illustrative: "Had there been in Kautokeino pine forests such as those in Karasjok, then the Mountain Lapps would also to a large extent have built houses near the church property [Kirkestedet]."¹³ Besides the scarcity of local building materials, settlement at Kautokeino was discouraged by the lack of good fishing in the Kautokeino River (rapids downstream prevented the salmon of the Alta River from reaching the Kautokeino River). At Karasjok, on the other hand, the fishing was extremely good, and since fish constituted an important food source, this was an attraction to settlers. A further inducement to settlement at Karasjok (and the Karasjok River valley) lay in the better opportunities there for agriculture. Many sites along the Kautokeino River and its tributaries were suitable for farming on a limited scale but these lay untilled in Nissen's time, probably because Karasjok was a more attractive location. But if Kautokeino lacked many of the attributes for permanent settlement, it offered in its place the finest reindeer pastures in the country and it is for this

¹³ K. Nissen, "Lapper og Ren i Norge," Det Norske Geografiske Selskabs Aarbok, Vol. XXVI-XXVII, 1914-1916, p. 79.

reason that it became the centre of the Finnmark nomads.

Originally Karasjok, like Kautokeino, was entirely inhabited by reindeer-herding Lapps. However, the arrival of Kvaen families, most of whom were fishermen and farmers, to the Karasjok River valley in the 1720s, and intermarriage with indigenous Lapps, led in a very short period to a distinction in the proportion of settled to nomad Lapp in the two fledgling settlements. Thus, in 1757, there were ten permanently settled families in Karasjok but only three in Kautokeino. Later, in 1891 and 1900, the nomads composed seventy-one per cent and sixty per cent respectively of the total Lapp population of Kautokeino. In Karasjok, on the other hand, the corresponding figures were thirty-three and thirty-two per cent and since then the relative proportion of settled to nomad in the two communities has persisted.

C. Reindeer Nomadism World War One--World War Two

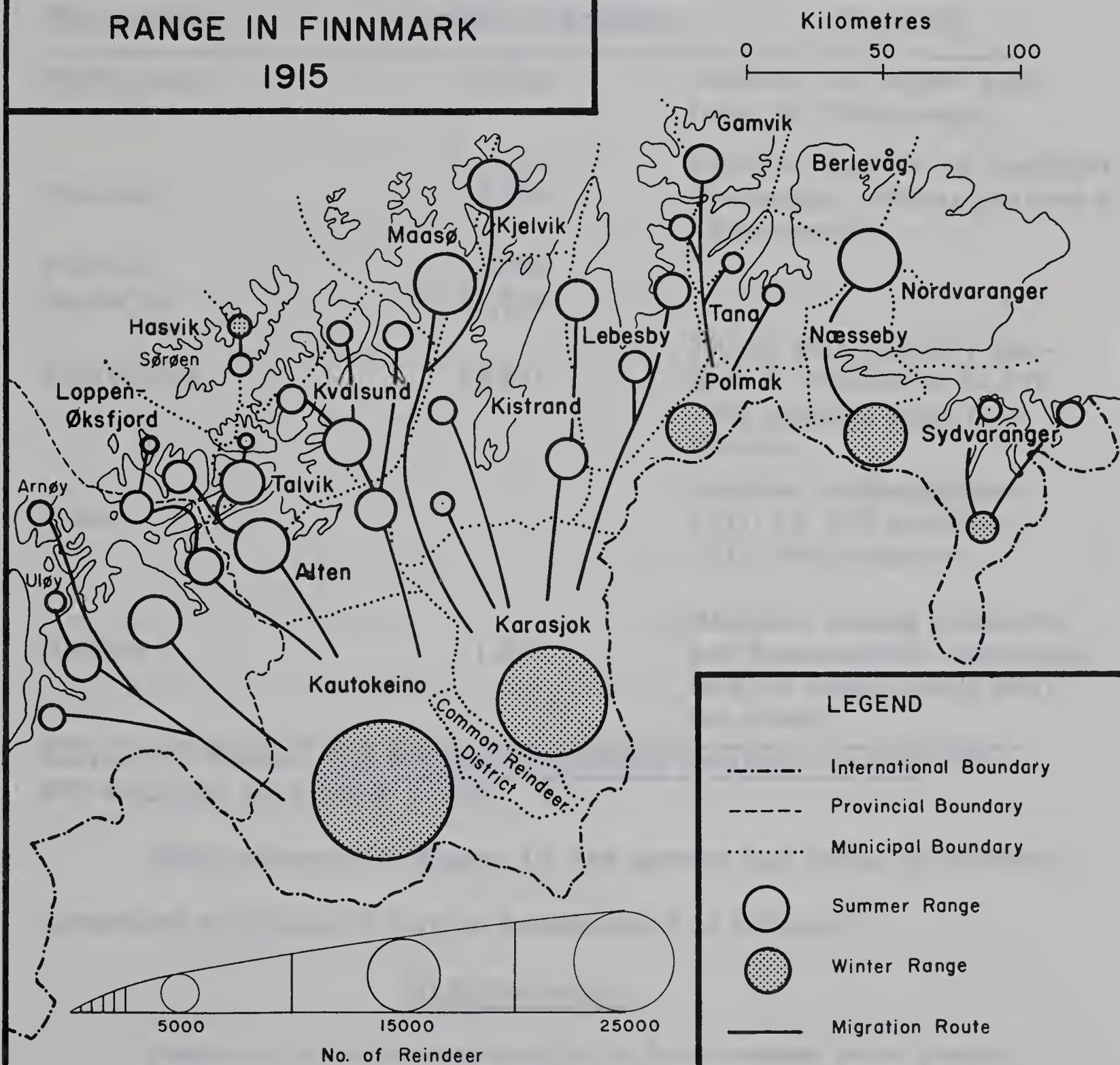
The first complete study of reindeer nomadism in Finnmark was contained in a report by Reindeer Inspector Kristian Nissen¹⁴ for the Agriculture Department (Landbruksdepartementet) in 1911-1912. Nissen's report provides valuable information concerning the location of grazing districts and reindeer herds, and is useful as a basis for comparison with later studies.

¹⁴This section is based entirely upon the report of Nissen.

In the years preceding the German occupation of Finnmark, the pattern of reindeer nomadism largely conformed to the picture presented in Nissen's report. While the coastal districts of Finnmark were exposed to modern influences at the turn of the century, the isolated Lapp settlements of interior Finnmark remained virtually unaffected until the war and occupation. At the time of Nissen's survey the nature of reindeer nomadism in Finnmark was still typically nomadic with most families following their herds uninterruptedly all winter. However, there was a marked tendency toward the establishment of permanent settlements, which became more and more the condition with improvement in communications and transportation in Finnmark.

The total number of reindeer in Norway, according to Nissen's report, was 141,755, of which 100,650, or seventy-one per cent, belonged to Finnmark. Table XII shows the numerical distribution of the Finnmark herds according to municipality and location of the summer range (sommerbeite) and winter range (winterbeite). Already evident from Nissen's map (Figure 10) is the predominance of Kautokeino and Karasjok as centres of reindeer herding, both Sydvaranger and Polmak being much smaller by comparison. Moreover, by 1912, the status of reindeer herding in the two latter municipalities had altered considerably from that in Kautokeino and Karasjok.

DISTRIBUTION OF REINDEER ON SUMMER AND WINTER RANGE IN FINNMARK 1915



Source: After K. Nissen, 1915

Figure 10

Table XII--Distribution of Finnmark Reinder according to Municipality, 1911-1912

Municipality	Number of Reindeer	Remarks
Sydvaranger	2,500	Summer and winter pastures in Sydvaranger.
Nesseby	9,200	Summer pasture on Varanger Peninsula. Winter pasture in Sydvaranger.
Polmak	5,825	
Karasjok	31,285	
Kautokeino	50,810	29,640 with summer pasture in Finnmark, 21,170 with summer pasture in Troms.
Alten		Included in Kautokeino. 1911-12, 290 reindeer; 1915, 230 reindeer.
Sørøen	1,030	Reindeer belong to Hasvik and Hammerfest municipalities but range freely over the island.

Source: K. Nissen, Det Norske Geografiske Selskabs Aarbok, Vol. XXVI-XXVII, 1914-1916, p.109.

With reference to Figure 10, the pattern and status of reindeer nomadism in Finnmark may be summarized as follows:¹⁵

(a) Sydvaranger

Pastures in the central portion of Sydvaranger were grazed by small herds of reindeer the year round. For the most part these herds were owned by Settled Lapps who used the animals for draught

¹⁵Nissen, op. cit., pp. 72-84.

purposes. In the neighbouring municipality of Nesseby (Naesseby) about 10,000 animals had winter pastures in Sydvaranger but were moved out onto Varanger Peninsula for spring, summer and fall grazing.

(b) Polmak

The Polmak herds utilized summer range near Hopseidet on Northkyn Peninsula. By Nissen's time, the families no longer migrated with the herds, and reindeer nomadism had declined almost completely. The number of animals involved was a mere one or two thousand. Pastures to the south of Hopseidet were assigned to the Karasjok Lapps if theirs to the west were overstocked. However, such an arrangement meant that the Karasjok summer range was wedged between the winter and summer ranges of Polmak. At the time there was considerable dissatisfaction with this situation on the part of the Karasjok Lapps.

(c) Karasjok

The Karasjok Mountain Lapps had for some time undertaken long migrations to the mountain tracts between Karasjok and the heads of the large fjords Laksefjord and Porsangen to the peninsula between, and as far seaward as the island of Magerøy. Their winter range was in the neighbourhood of Karasjok. Considerable complexity in the individual migrations had evolved: Lapps using summer

range on the island of Magerøy had to reach the island before calving time in spring for the animals had to swim across Magerøysund. For those families who had calving grounds and summer range that coincided there was less movement involved, and possibly less urgency too. The return from the coast in the fall was similarly co-ordinated with the herds remaining near the heads of the fjords until the early part of November before beginning the trek to the winter grazing. Clearly, as Nissen points out, the Lapps' movements were straightforward and orderly with "each year the families returning to the same winter and summer pastures."¹⁶

(d) Kautokeino

The reinbyer or "herding groups" of Kautokeino can be seen on the map to spread from the winter grazing territory toward the north and northwest. Many of the large offshore islands served as summer grazing areas, including Kvaløy, Seiland and Stjernøy. The latter island, although belonging to Kautokeino Lapps, was used by Lapps who wintered in Alten (present-day Alta municipality). The large peninsula between Alten and Kvaenangen was also used. Westward the summer range extended to Tromsø and several islands. Shared with Karasjok was a Faelles reinbeitedistrikt or "Common reindeer district." This area was established in 1871 as a winter

¹⁶Ibid., p, 75.

grazing district but no longer exists.

(e) Alten (now Alta municipality)

Former Kautokeino Lapps who had their summer range on the island of Sternøya in Nissen's day had sought winter grazing in Alten and were then permanent residents there.

(f) Sørøen (Sørøya)

The Lapps here originally had come from Kautokeino. At the time of Nissen's investigations they obtained an uncertain livelihood from reindeer, preferring to support themselves largely by fishing. They were no longer nomadic, if they ever had been, and lived in permanent houses situated along the coast.

In the absence of further data it is difficult to provide a precise account of the status of reindeer nomadism in Finnmark in the years following Nissen's report. As stated earlier, the picture formed by Nissen is generally held to be true up until World War Two, although, understandably, there were changes and modifications over the years. On the other hand, the report tells us little about the sequence of changes that were taking place in the nomadic economy, nor anything about the degree of settlement.

Certainly one of the innovations which was bound to influence the location of Mountain Lapp settlements was the establishment of roads and communications, but this was by no means all. The Lapps

had to contend with expanding Norwegian settlement. For example, between 1910-1930, the population of urban settlements increased in Finnmark 29.8 per cent and the corresponding percentage for dispersed settlements was 8.2 per cent. Between 1930 and 1950 the figures were 12.3 and 7.0 per cent respectively.¹⁷ Some measure of the growth in towns and population may be gauged from Figure 11.

With an expansion in settlement came a growth in agriculture, though of all the northern provinces this was probably less the case in Finnmark. Particularly in Nordland province there occurred fencing of migration routes and sheep began to compete with reindeer for range. A threat to the traditional territory of the Mountain Lapp was the installation of hydro dams to provide electrical power for developing mines and urban centres. The resultant flooding inundated calving areas and upset customary patterns of movement. In some cases the building of dams was an indirect blessing, drying up swift-flowing streams, and thereby erasing the necessity of bridges for the reindeer. Generally speaking, therefore, the freedom of movement which was so characteristic of the nomadic life found itself increasingly hedged round by government regulations and the mounting pressure of Norwegian settlement.

¹⁷ H. Myklebost, Norges Tettbygde Steder 1875-1950, Ad Novas No. 4, Universitetsforlaget, Oslo, 1960, p. 150.

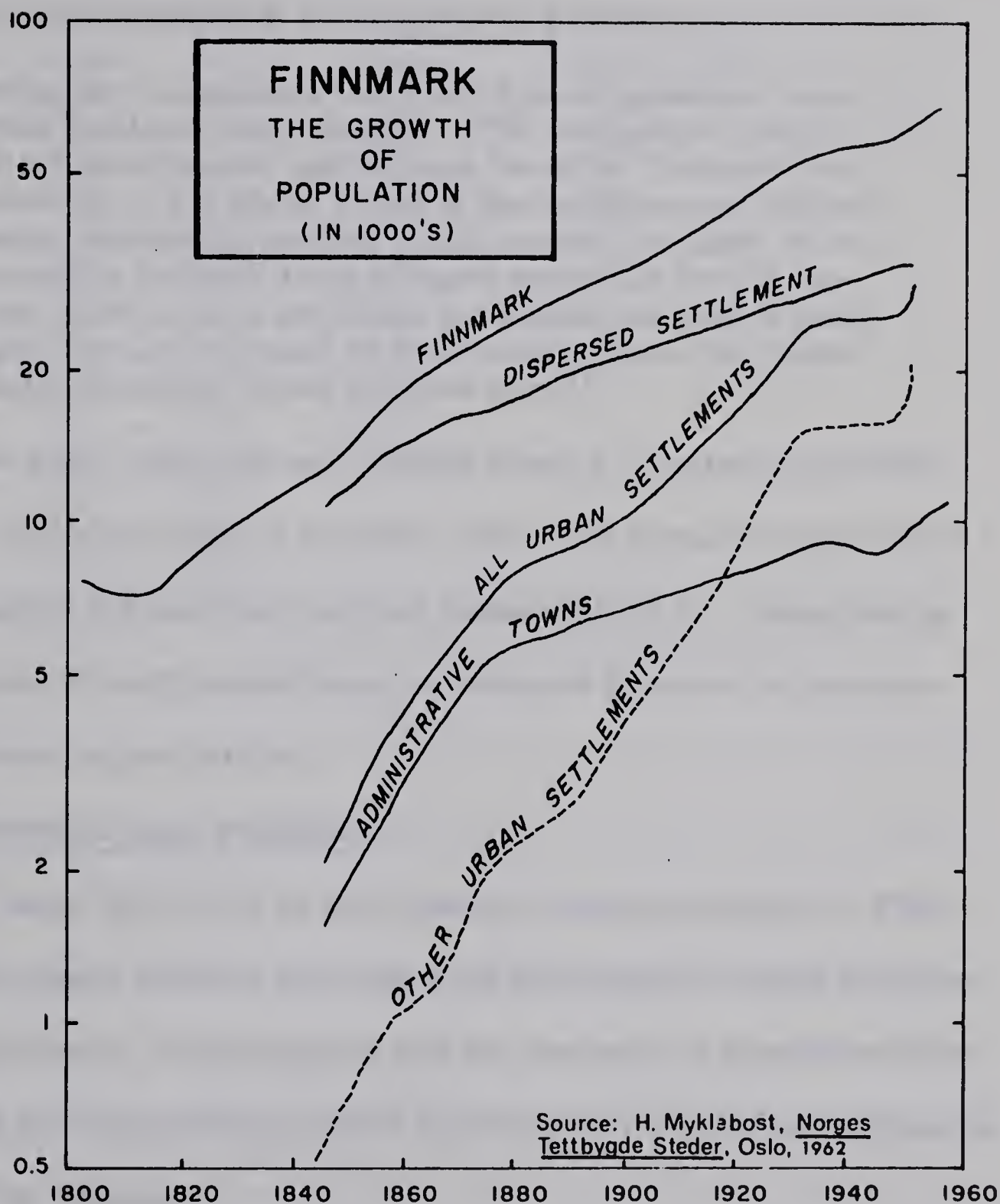


Figure 11

D. Reindeer Nomadism: Post-war Situation

The impact of five years of German occupation upon Finnmark is perhaps best summed up by Vorren and Manker:

During the occupation, there were great upheavals even in the smallest Lapp villages. The occupation troops settled everywhere, and through them the "window" was opened on to the whole arena of the machine-age culture. Roads, telephones and sea traffic opened up many of the previously isolated Lapp villages and all at once it became more or less essential for people not only to think about, but also to make up their minds about, the fundamental problems of the machine age.¹⁸

The years after the war brought about a complete disintegration in the old way of life, a process, which had already begun before the occupation, but was hastened and intensified by it. Complicating the problems of readjustment was an immense increase in the population of most Lapp districts.

1. The Mountain Lapp Population

In Table XIII it can be seen that the nomad population in Finnmark in the years between 1949 and 1964 increased by ninety families or 404 individuals. Keeping pace with the increase in population after 1954 was a corresponding increase in the number of reindeer belonging to nomads in Finnmark.

¹⁸Ø. Vorren and E. Manker, Lapp Life and Customs, Oslo University Press, 1962, p.154.

Table XIII--Mountain Lapp Population and Reindeer
in Finnmark, 1949-1960

Year	Total House- holds	Total Per- sons	Total Rein- deer	Total Average Reindeer per Person
1949	245	1,101	54,837	50
1953	250	1,150	72,412	63
1954	273	1,150	80,840	70
1955	293	1,258	83,850	67
1956	314	1,292	92,020	71
1957	303	1,369	101,809	74
1958	308	1,369	98,327	72
1959	304	1,380	98,020	71
1960	307	1,423	95,531	67
1961	307	1,423	--	--
1962	319	1,487	--	--
1963	313	1,420	--	--
1964	335	1,505	--	--

Source: Compiled from Tidsskrift for ðet Norske Landbruk, No. 1-2, 1964, p. 8 and reports of Lapp sheriffs, 1961-1964.

The accumulation of a large proportion of the nomad population in the younger age groups and the propensity of nomad couples to have large families (Table XIV) promises a continuing rapid growth of the nomad population. And because few Mountain Lapps are willing, or able, to give up reindeer breeding, the increase in the nomad population has created the problem of how the reindeer industry can adequately support the growing numbers. Indicative of this situation are the many nomad families who today are attempting to support themselves with herds that are too small.

Table XIV--Percentage Distribution of Married Couples
According to Number of Children

Total Children	Mountain ¹ Lapps	Norwegian Population
0	11.6	16.0
1	11.6	23.9
2	13.7	23.8
3	12.0	14.2
4	12.5	8.2
5	10.8	4.8
6	11.2	3.1
7	6.6	2.1
8	5.0	1.5
9	4.2	1.0
10 or more	0.8	1.4

Source: Tidsskrift for det Norske Landbruk, No. 1-2, 1964, p. 10.

¹Sixteen per cent of nomad families have seven children or more compared with six per cent of Norwegian families.

2. The Administration of Reindeer Herding

Since Nissen's time the administration of reindeer herding in Norway has undergone reorganization.¹⁹ A law passed in 1933 divided the country into five Lapp Regions roughly corresponding to the provinces of Finnmark, Troms, Nordland, Nord-Trøndelag and Sør-Trøndelag. In turn, each Lapp Region (Lappefogderi) was divided into Reindeer Circuits (Reinsogn) subdivided into Reindeer Grazing

¹⁹Following the work of Nissen, it remained for Ørnulf Vorren to investigate reindeer nomadism in the years following World War II. For a discussion of his conclusions, see Ø. Vorren, "Reindriften i Norge," Norsk Geografisk Tidsskrift, Vol. XI, Part 5-6, No. 1-2, 1947, pp. 199-219 and Finnmarksamenes Nomadisme Vols. I and II, Universitetsforlaget, Oslo, 1962.

Districts (Reinbeitedistrikter). To the latter were assigned separate numbers and, with the exception of Tromsø, a name. Responsibility for administration was placed with the Reindeer Bureau (Reindriftskontor) of the Department of Agriculture (Landbruksdepartementet).

Each of the Lapp Regions is administered by a Lapp Sheriff* (Lappefogd); appointed to the provincial council and responsible to him are subordinates who oversee the management of the individual Reindeer Circuits.

3. Distribution of Reindeer in Finnmark, 1945-1946

Finnmark is the largest of the five Lapp Regions and, in contrast to the others, is divided into four Lapp Circuits; Varanger, Polmak, Karasjok and Kautokeino. In all there are thirty-one Reindeer Grazing Districts in Finnmark (See Appendix C), each of which is either a summer or winter grazing district.

In 1945-46, at the time of Vorren's survey, the four Circuits contained the following numbers of reindeer (Table XV).

* This title is an unfortunate carry-over from an earlier period.

Table XV--Reindeer and Households, Finnmark
1945-1946

Circuit	Reindeer	Households
Kautokeino	25,895	62
Karasjok	18,911	195
Polmak	2,833	37
Varanger	3,468	19
Total	51,107	313

Source: Ø. Vorren, Norsk Geografisk Tidsskrift, Vol. XI, 1947, p. 219.

The distribution of reindeer herds over the summer and winter pastures in Finnmark is illustrated by the map, Figure 12. In reference to the four Reindeer Circuits the following should be noted:

(a) Kautokeino (30, 31)

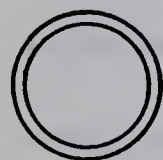
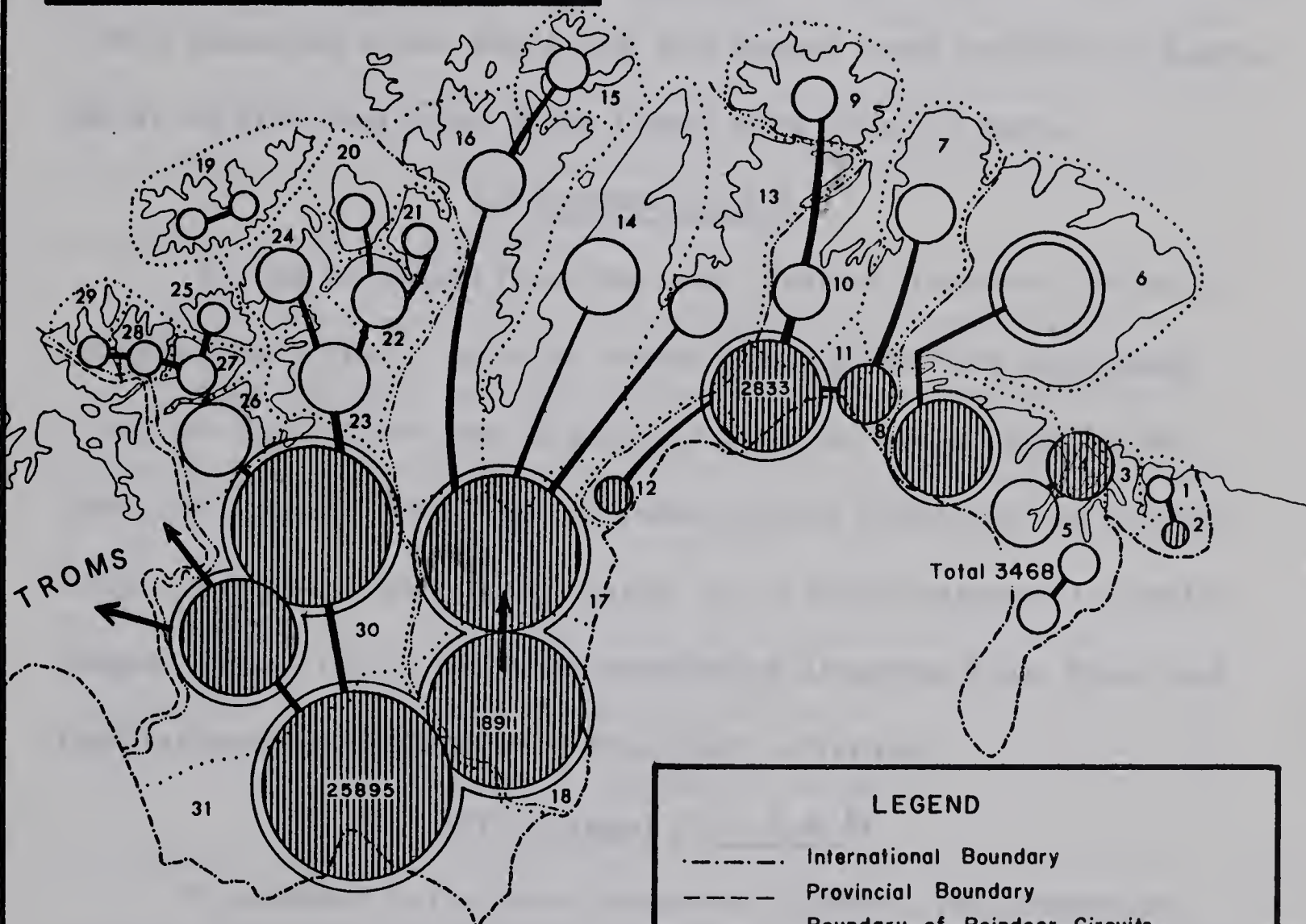
Districts numbers 30 and 31 are winter grazing areas. At the time of Vorren's study all reindeer were to be out of these districts by the thirty-first of May. The largest proportion of the Kautokeino Lapps in summer moved to pastures around Altafjord and the large islands of Kvaløya, Seiland and Stjernøya, where there were some eleven different summer grazing districts. The remainder of the nomads had grazing areas in Troms province. A few of the nomads still followed their herds the year round.

(b) Karasjok (17, 18)

Similar to Kautokeino, Karasjok was divided into two winter grazing areas (17, 18). The summer districts, all of them large, lay

**DISTRIBUTION OF REINDEER
ON SUMMER AND WINTER
RANGE IN FINNMARK
1946-1947**

Kilometres
0 50 100



Double circle indicates more than 1000 Reindeer. The figures indicate the total number of reindeer in the four Reindeer Circuits of Finnmark:

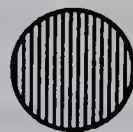
Kautokeino	25,895
Karasjok	18,911
Polmak	2,833
Voranger	3,468

LEGEND

- International Boundary
- Provincial Boundary
- Boundary of Reindeer Circuits
- Boundary of Grazing Districts



Summer Range



Winter Range



Migration Route

Grazing Districts
30 and 17 are fall
Grazing Districts
for Kautokeino and
Karasjok respectively.

Source: After Ø. Vorren, *Norsk Geografisk Tidsskrift*, No. 1-2, Bind XI, Oslo, 1947

Figure 12

on the island of Magerøy and around Porsangen and Laksefjord. In keeping with what has been described earlier, most of the nomads already had permanent dwellings in Karasjok village and the families migrated with the herds during summer. In view of the total destruction of Karasjok at the war's end, few houses were available in Karasjok at the time and many of the Lapps were living in tents.

(c) Polmak (11, 12)

As can be judged from the map, Polmak Reindeer Circuit is comparatively small, with the winter grazing districts stretching along the Tana River, one of which at the time was utilized by the Karasjok Lapps. When Vorren undertook his fieldwork, six herders were employed to manage the herds, all of which belonged to settled Lapps. Small farms had been established along the Tana River and both farming and fishing were important activities.

(d) Varanger (1, 2, 3, 4, 5)

In contrast to the other Reindeer Circuits, the number of reindeer in Varanger had markedly declined since 1939. In 1946 the total number of animals was 3,468 as opposed to approximately 4,568 in 1939, a difference of 1,100 animals. As in Polmak, the task of herding was entrusted to five employed herders and all the Lapps in the circuit were permanently settled. In Sør-Varanger the remainder of the animals were owned by Settled Lapps, Norwegians and Kvaens.

In the thirty years that had elapsed following Nissen's report, the number of reindeer in Finnmark declined almost fifty per cent; indeed, the total reindeer in Norway (101,000) was less than had occupied Finnmark in 1915. Moreover, during the intervening years, many Mountain Lapps had forsaken the strenuous and often unsuccessful life of reindeer herding for the small comforts and security of a settled existence.

E. The Influence of Roads on the Location of Lapp Settlement

What had been merely a discernible tendency at the time of Nissen's report, that is, the construction and use of fixed dwellings by the nomads, was by the time of Vorren's study, in 1946, a clearly established fact. More and more nomads were attempting to manage their herds from permanent residences. This situation had existed for some time in the districts of Polmak and Varanger but it was then becoming very evident in the traditionally nomad districts of Kautokeino and Karasjok as well. Moreover, the development of transportation and communication in Finnmark had provided the means by which to lighten the task of migration between grazing districts, and the nomads had begun to employ vehicles

and boats to transport their families and equipment.²⁰

1. Early Development of the Road Network

The use of vehicles in Finnmark really has been made feasible only in the postwar years. As late as 1915, Finnmark, for the most part, was without roads. The majority of the settlements were within reach of the sea, and thus the sea had been for centuries the traditional avenue of transport. Moreover, the paucity of inhabitants in the interior of the province and their scattered distribution had precluded the extension of roads inland. Indeed, at the time of Nissen's survey of nomadic life in Finnmark, there was one stretch of road linking the Tana River with Vardø, and local roads of poor quality, limited to the neighbourhoods of Alta, Lakselv and Kirkenes, in all a mere 400 Km. (250 miles) in the whole province.²¹

²⁰In the matter of transport this remark of A. Bartholsen is noteworthy: "Mechanization will proceed here [in reindeer herding] as elsewhere. It is probable that a herder prefers a motorcycle and 'snow track' [snowscooter] over reindeer [as a means of conveyance]. It is possible that before many years have passed, driving-reindeer will be as seldom seen as horses are in farming today." (A. Bartholsen, "Reindriftnaeringen i Finnmark," Tidsskrift for det Norske Landbruk, July-August, No. 7-8, 1960.)

Similarly, it seems that it will not be long before radio equipment will be used rather extensively to assist in reindeer herding. Already Game Wardens employ aircraft and radio to patrol large areas of the Vidda. In Sweden it is reported that certain wealthy herders, or possibly groups of herders banded together, have chartered helicopters in order to transport equipment and families during migrations. (See "Reinjegere Regjerer Vidda med Fly og Radiotelefon," Samefolket, No. 10-12, October-December 1964, p. 182.)

²¹H. Luihn, Finnmark, En Økonomiske Analyse, Utgitt av Arbeidsdirektoratet, Oslo, 1952, p. 13.

By 1939 the provincial road system had increased to 1,300 Km. (ca. 812 miles). The national highway, No. 50 from south Norway, was practically completed as far as Kirkenes, but was generally of low standard. During the occupation this road was of such high priority that the Germans reconstructed much of it and tried, unsuccessfully, to keep it open throughout the year. Further extension of the road net was achieved by 1954 at which time the total road length had reached 1,642 Km. (ca. 1,026 miles)--1,128 Km. (742 miles) national road, 216 Km. (ca. 135 miles) of provincial road and 298 Km. (ca. 184 miles) of local road.²² Presumably this figure would have stood much higher had it not been for the enormous destruction inflicted upon the countryside--including the roads--by the retreating German army. Such was the damage that ten years after the war a quarter of the road system had yet to be repaired and

²²T. Lloyd, Reconstruction of Transportation in North Norway, Technical Report ONR 438-03-06, 1956, p. 8.

at least ninety bridges needed replacing.²³

2. Recent Expansion of the Road Network

By 1963, the most recent year for which figures are readily available, the total length of roads in Finnmark had reached the figure of 1,953 Km. (ca. 1,220 miles), including 1,184 Km. (ca. 740 miles) of national road, 377 Km. (ca. 235 miles) of provincial road, and 392 Km. (ca. 220 miles) of local road.

Heavy snow conditions and the prohibitive cost of keeping roads open in winter render approximately half of the Finnmark road network inoperative eight to nine months of the year. Of very great benefit to the inhabitants of Finnmarksvidda, therefore, was the introduction in the postwar years of snowmobile service to areas isolated in many cases by the closure of highways and roads.²⁴

Initially only two machines were used: between Alta and Kautokeino, and on the stretch Kirkenes-Jakobselv. A very considerable reduction in travelling time was the result. For example, whereas

²³ Loc. cit. (Trevor Lloyd raises an interesting point in this connection: The seeming reluctance of many Norwegian officials to engage in an ambitious road construction program at this time was an expression of their opinion that in the event of war with the U.S.S.R. Finnmark was expendable and "the absence of a good road network there might well be a stronger defence than its presence." (See Lloyd, op. cit., p. 9.)

²⁴ Before the introduction of snowmobile services in 1950, the main means of transportation between the coast and interior districts was by reindeer and sleigh. The introduction of snowmobiles revolutionized transport in winter.

travelling by reindeer from Alta to Kautokeino took two to three days, by snowmobile the time was six hours. Between the years 1950-1956, 5,000 passengers were carried and some 50,800 Km. (31,750) miles travelled. Later, due to an improvement in the road network and winter road clearance, the number of passengers declined. In 1960, 3,340 persons were transported by snowmobile. During the winter of 1962-1963, four routes were maintained with a total length of 299 Km. (ca. 187 miles). More recently the route between Alta and Kautokeino has been modified so that buses are now used between Alta and Masi and a snowmobile for the remainder of the distance between Masi and Kautokeino. (This too will be abolished with the opening of the all-winter road, though it was stated that this would be, for the time being, open to truck transport only.)

An investigation into Lapp conditions in Finnmark was undertaken by a special committee in 1956. Amongst the subjects under examination was the matter of communications, particularly as it applied to those regions of the province where reindeer herding predominated. Included in the submissions of the committee were recommendations for a ten-year road construction programme linking Lapp centres with the existing network.

The proposals included the following routes:²⁵

1. An interior state highway linking Tana bru-Karasjok-Kautokeino-Nordreisa (a short stretch still to be completed).
2. Kautokeino-Aiddejavrre-Finnish border (completed).
3. Conversion of the road Alta-Kautokeino to an all-weather road (completed fall 1965).
4. A road connecting Leirpollen--Kjaes--Veines (not undertaken).
5. A road connecting Kokelv-Slåtten-Havøysund-Magerøysund (portion completed).
6. Kautokeino-Galanito-Goatteluobbal-Finnish border (not undertaken).²⁶

The meagre system of roads existing in Finnmark early in this century could hardly have had much influence upon the pattern of Lapp settlement or the functioning of a reindeer herding economy. At least in the area where they might have offered an alternative to traditional means of conveyance, roads were non-existent. Consequently, even in Nissen's day, the "settlement pattern" was, as Voren described it, "completely nomadic, that is the families followed

²⁵ Kirke og Undervisningsdepartementet, op. cit., p. 51.

²⁶ The notations on the present status of the roads is taken from a recently published road map of Norway (1965). According to informants, conversion of the Alta-Kautokeino road to an all-weather road was expected to be complete by November 1965.

the herd uninterruptedly all winter."²⁷

The advance of a road system, slender as it was, into the areas of nomadic economy, introduced a new element for change in the way of life of the Mountain Lapp. One manifestation of change was the construction of permanent houses, and in many instances their orientation toward the transportation network. Thus it was apparent to Vorren, in 1953-1957, when he revisited the nomad centres, that a marked increase in the number of Lapps with permanent winter houses had occurred since Nissen's study of reindeer nomadism in 1915.

In examining the reasons for the location of the winter dwellings, Vorren noted that a juxtaposition of a number of factors were mainly responsible, and were of varying influence depending upon the centre in question.²⁸ For example, the location of winter dwellings in Kautokeino district was determined principally by the presence of roads and already established settlements. Elsewhere on Finnmarksvidda the explanation for the location of fixed dwellings lay more in their orientation toward grazing areas and migration routes. In all cases, however, the over-all tendency was for the

²⁷Pers. comm. Ø. Vorren, Tromsø, 1965.

²⁸Pers. comm. Ø. Vorren, Tromsø, 1965.

families to forfeit the former close relationship with the herd for some of the benefits to be gained by permanent settlement and closer contact with the settled population.

Vorren's emphasis upon the location of the winter dwellings is significant. Hitherto, in Kautokeino and Karasjok Reindeer Circuits, it was customary for each family to have at least two residences; a summer and winter residence and, in some instances, spring and autumn camps. But with the move toward more permanency of settlement the spring, summer and autumn camps were abandoned in favor of permanent residency in the winter dwelling. The reason for this is fairly obvious if one keeps in mind the expansion in communications that had taken place in Finnmark. Improved road connections and transport had afforded a quick and easy way of reaching the seasonal camps. And since the greatest amount of work with the herds fell during the winter months, a natural outcome was to select the winter site as the place for a permanent home. In the case of Polmak and Varanger a single residence had been the prevailing condition for some years before Vorren's survey.

F. Problems Related to the Weakening of the Herd-Family Relationship

The progress from the conditions of full nomadism existing in the mid-nineteenth century toward permanency of settlement have been irregularly traced; the consequences of this transition upon the operation of a reindeer-herding economy are noteworthy.

Full nomadism entailed a very close co-partnership between animal and family and in this sense was a condition of syntrophy or, as Myres terms it, "maintenance-in-common."²⁹ That is, the Lapps maintained themselves entirely upon the products of the reindeer--meat, milk, hides and antlers. The animals, for their part, deprived by domestication of the ability to successfully fend for themselves, benefited from the protection of the herders. Progressive changes in reindeer nomadism ultimately have resulted in a weakening of this close herd-family contact. From the absence of regular close rela-

²⁹J. L. Myres, "Nomadism," Journal of the Royal Anthropological Institute of Great Britain and Ireland, Vol. 71, 1941, p. 20. Myres, in his paper, makes clear the distinction between "nomadism," "transhumance," and "migration." In the strictest sense, the seasonal movements of the reindeer-herding Lapps, according to Myres, would more correctly be termed transhumance, the key factor being the seasonality of movements. Myres defines migration as "a general trend or drift in a particular direction, so that pastures and abodes, once left behind, are not revisited." Throughout this thesis the term migration, in reference to Lapp movements between hinterland and coast, has consistently been used and is, in respect of Myres' definition, incorrectly used. However, because the word "migration" is commonly employed in reference to Mountain Lapp seasonal movements, it was thought better to retain its use in this thesis.

ship there has arisen a number of difficulties in herd management. Not the least of the problems is the control of the herds.

The extensive system of herding, as pointed out in an earlier section, produces a healthier, thriftier animal. But if the reindeer are left over the summer grazing season virtually without adequate supervision, by the fall they become quite unmanageable. The result is that orderly migrations are made exceedingly difficult. Moreover, because of the intractability of the reindeer, calves are often not earmarked and a proper record of the number of animals cannot be maintained. Part of the blame for this situation may be attributed to the Lapps' misuse of the fences erected to keep the reindeer contained within the widespread areas of summer and winter range. Freed by the fences of the necessity of closely following the herds, the herders often allow the animals to run unattended throughout the whole summer grazing period. A further explanation for the lack of proper herd control lies in the desire of Lapp families to remain in urban settlements. Frequently separated by long distances from their herds, the tendency is to leave the reindeer unsupervised for long intervals. Apart from encouraging wildness in the animals, this practice results in the mixing of herds. A corollary to this situation may be found in connection with the utilization of winter range. As more families acquire a

house in an urban settlement, there is an increasing tendency for the herds to congregate on range near the settlements. The result is over-grazing of the lichen to the extent that it cannot adequately recover.

The adjustment of their traditional reindeer herding economy to the demands of the modern commercial economy poses many difficulties for the Mountain Lapps. Hampered by social and economic problems with which they are frequently unable to cope, the Lapps attempt to retain that way of life which they know best. Evidence for this appears to lie in the many Lapp families in Finnmark who are attempting to eke out a living from reindeer herding. It has been said that a family (five to six persons) must have at least two hundred animals in order to be able to live entirely by reindeer herding (see Appendix D).³⁰ But it becomes apparent, if one examines Table XVI, that there are many nomad families who attempt to maintain themselves on less than the minimum two hundred reindeer. In Kautokeino Reindeer Circuit, for example, 59.8 per cent of the families had less than two hundred reindeer and in Karasjok the figure was 61 per cent.

³⁰ S. Skjenneberg, Rein og Reindrif, A. S. Fjell-Nytt, Lesjaskog, 1965, p. 289.

Table XVI--Distribution of Families According to
Herd Size, Finnmark 1961

Circuit	Up to 100 Reindeer	100-150 Reindeer	150-200 Reindeer	Over 200 Reindeer	Total
Kautokeino	39	35	30	70	174
Karasjok	26	21	17	41	105
Polmak	7	4	4	5	20
Varanger	4	0	0	4	8
All Finnmark	76	60	51	120	307

Source: Reports of Lapp Sheriffs for 1961.

Reindeer herding in Finnmark is a basic economic activity for Lapps inhabiting the interior plateau of Finnmark. Only 9-10 per cent of the 20,000-22,000 Lapps inhabiting Norway are reindeer herders, and nearly all are to be found in Finnmark. While the percentage of nomads is small, it does not indicate any particular decline in their numbers. In recent times at least, they have always represented a very small proportion of the Lappish population. Accordingly, recent official statistics (Table XVII) do not appear to suggest any large-scale shift of the nomads away from their traditional means of livelihood. In 1964, 1,556 Lapps gave reindeer herding as their principal means of livelihood, and another 927 listed it as a subsidiary occupation. Table XVIII is included to show that there can be fluctuations from year to year in the number of persons--and reindeer--associated with reindeer herding.

The concentration of the nomad population remains centered

in the Reindeer Circuits of Karasjok and Kautokeino, the latter having the higher proportion of nomads. Similarly, the greatest number of reindeer are owned by herders from Karasjok and Kautokeino Circuits. The two remaining Reindeer Circuits in Finnmark, Polmak and Varanger, have relatively few families dependent entirely upon reindeer herding. On the other hand, a considerable number of persons in Varanger have reindeer herding as a secondary occupation. In fact, in 1963 and 1964, the number of reindeer owned by Lapps in this classification exceeded the numbers owned by their counterparts in either Karasjok or Kautokeino.

Table XVII--Total Number of Lapp Families and Persons in Finnmark with Reindeer Herding as Principal Livelihood and Subsidiary Livelihood, 1964

Reindeer Circuit	Reindeer Herding as Principal Livelihood			Reindeer Herding as Subsidiary Livelihood		Individual Reindeer in each Reindeer Circuit
	Total Families	Total Persons	Total Reindeer	Total Persons	Total Reindeer	
Kautokeino	195	912	63,504	387	5,560	69,064
Karasjok	116	545	29,498	260	2,737	32,235
Polmak	22	68	6,119	48	652	6,771
Varanger	10	31	5,118	232	5,686	10,804
Total	343	1,556	104,239	927	14,635	118,874

Source: Compiled from Reports of Lapp Sheriffs for 1964 (See Appendix E.)

Table XVIII--Total Number of Lapp Families and Persons
in Finnmark with Reindeer Herding as Principal Live-
lihood and Subsidiary Livelihood, 1963

Rein- deer Cir- cuit	Reindeer Herding					Number of Reindeer
	Reindeer Herding as Prin-			as Subsidiary		
	cipal Livelihood			Livelihood		
	Total	Total	Total	Total	Total	
Families	Persons	Reindeer	Persons	Reindeer		
Kautokeino	189	881	57,465	381	5,348	62,813
Karasjok	118	524	26,176	299	3,005	29,181
Polmak	18	63	6,009	47	714	6,723
Varanger	10	37	4,747	185	7,444	12,191
Total	335	1,505	94,397	912	16,511	110,908

Source: Compiled from Reports of Lapp Sheriffs for 1963.

PART THREE

MA SI--A MOUNTAIN LAPP SETTLEMENT

CHAPTER V

THE SETTING

A. The Physical Setting

1. Site and Location

Masi is a Mountain Lapp village situated in the interior of Finnmark midway between the towns of Alta and Kautokeino. The name Masi (Lappish Máze) comes from the Lappish mac'cât meaning to bend or curve. The Masi River, which enters the main stream of the Kautokeino River at Masi, makes a series of bends in its course from the mountain Macivarre (Lappish Mázevárri), giving the village its name.

A distinction is made in the naming of the main river. From its headwaters in the plateau region of the Finnish border to the stretch of river passing through the settlement of Masi, the river is called the Kautokeino River. Downstream from Masi the river becomes the Alta River until it enters Altafjord, though the Lapps commonly refer to the stretch of river between Masi proper and the boundary of Alta municipality as simply, Aedno, meaning "large river." The elevation of the Kautokeino River at Masi lies between

825 and 865 feet above sea level.*

The settlement of Masi extends irregularly along a former floodplain of the Kautokeino River at an elevation of 870 feet above sea level. The width of the floodplain varies being widest (perhaps three-quarters of a mile) upstream, where the Masi River enters the main river and narrowing progressively downstream, that is, to the north. The valley slopes, particularly along the eastern side of the Kautokeino River, rise abruptly 300 feet or more above the floodplain to meet the Finnmark plateau. The steepness of the valley slopes restricts settlement to the floodplain which, in conforming to a river meander, occurs alternately on the west and east sides of the river. For the most part the settlement of Masi is situated on the west side of the Kautokeino River. The southern boundary of the village is formed by the Masi River at the point where it enters the Kautokeino River. The upper portion of the village is called Øvre Masi or Upper Masi. A mile and a half downstream a prominent hill, called "Hirssaluokka" or "Timber Hill" (ca. 90 feet elev.) marks the center of the village, and this portion of the village is called Midtre Masi or Middle Masi. Fur-

* Spring flooding of the Kautokeino River occurs in the last part of May or the beginning of June, inundating farmland in Masi and leaving a large portion of the valley under water. The river may rise as much as thirty-three feet. A levee has been thrown up along a length of the river to provide protection for the main agricultural area.

ther downstream is Nedre Masi, or Lower Masi, the largest part of which lies on the east side of the river. In all, the distance from the mouth of the Masi River to the point where settlement dwindles to the north is about three miles.

The region of Masi as delimited in this thesis corresponds roughly to the boundaries set by topographic sheet U6 (1:100,000) of the Norwegian Geographical Survey, 1924-1925 (Figure 13). The southern boundary of the Masi region begins just south of Goldden on the Kautokeino River. Numerous tributaries enter the main river in its course northward toward Masi, and rapids are encountered at several points along this stretch of the river. The course of the Kautokeino River through Masi and downstream follows several shallow meanders. Floodplains on either side of the river provide sites for small farms and dwellings. Between Ladnatjavrre and Virdnejavrre bedrock outcrops are responsible for the existence of rapids over a distance of one and a half to two miles. On both sides of the river mountains rise abruptly until, northward of Virdnejavrre, the river is forced between a narrow fault in the Caledonian range, and at this point the northern limit of the Masi region is reached.

On the east side of the Alta River many of the tributary rivers have their source in Jiesjavrre, the largest lake in Finn-

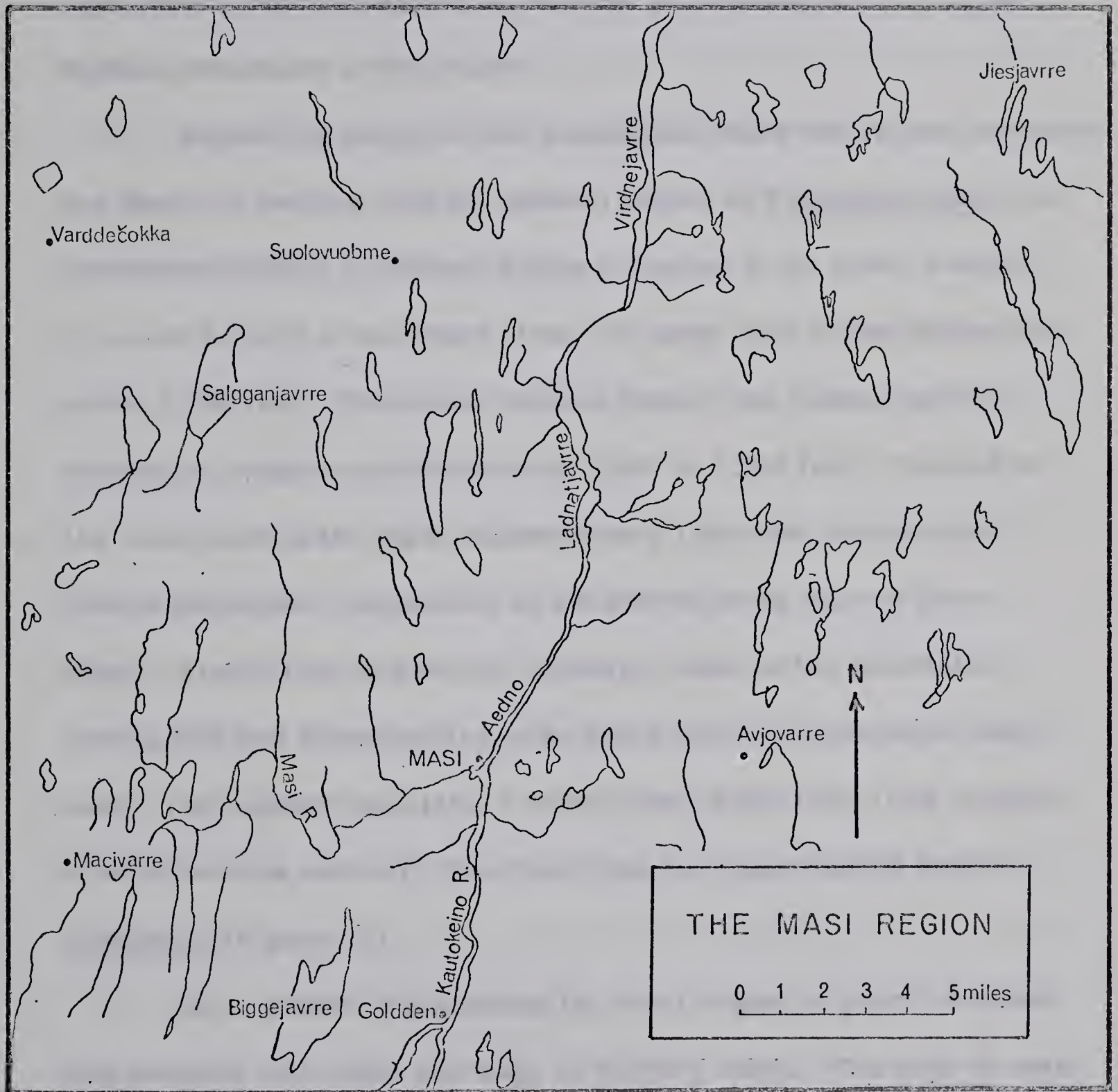


Figure 13

mark. To the west of the Alta River there are various streams considered to be in the region of Masi but, independently of the Alta River, reach Altafjord to the west of Baeskades,* one of the highest mountains in the region.

Beyond the valley of the Kautokeino River the region surrounding Masi, in keeping with the general nature of Finnmarksvidda, is characteristically a treeless plateau covered in its lower reaches by scrub forests of mountain birch. A large part of the plateau lies above 1,200 feet. Numerous valleys dissect the plateau and the mountains range in elevation from 1,500 to 1,800 feet. Several of the mountains in the Masi region exceed 1,800 feet in elevation. One in particular, Avjovarre, is situated directly east of Øvre Masi. Apart from Avjovarre, however, most of the mountains over 1,800 feet elevation are to be found north of Baeskades Mountain. The highest mountain, VarddeČokka (2,050 feet), lies roughly nine miles in a westerly direction from the Suolovuobme hostel (fjellstue) (Figure 13).

As a result of glaciation the Masi region is poorly drained and abounds with lakes and bogs of varying sizes. The bogs in many cases cover large expanses making cross-country travel arduous

*Baeskades Mountain actually lies just outside the northern boundary of the Masi region as delimited here.

and often hazardous. Within the immediate vicinity of Masi village there are few lakes. The hinterland of Masi contains many, however, notable among them being Jiesjavrrre. Of the smaller lakes, some are transitory, relying upon run-off to maintain them; others, perhaps deeper, have noticeably varying water levels depending upon the season. Elevations of the lakes range, broadly speaking, between 1,050-1,350 feet.

Underlying the Masi region are rocks of Archaen age, consisting of volcanics, sedimentaries (limestones, quartzites, phyllites, schists), gneisses and granites. Surficially, the Masi region is covered largely by morainal deposits. At several locations along the course of the Kautokeino River, glacio-fluvial materials are evident. Masi proper, in view of its position on an old floodplain, is underlain by deposits of mixed gravel and sand. Predominant along the west side of Øvre Masi is a sand and gravel ridge of considerable height and steepness, the composition of which is clearly exposed by the presence of a new roadbed following the crest of the ridge. The ridge, fluvial in origin, is of sufficient size and depth to serve as a site for one of the gravel pits supplying materials for the construction of the new road between Masi and Kautokeino.

2. Vegetation

An abundance of tree and other plant growth covers the Masi

region. The pine (Pinus silvestris) no longer grows in the Masi district. Evidence of its former presence occasionally is found, however; though doubtless in view of climatic conditions its growth was never widespread. Similarly, no spruce are to be found but the remains of spruce have been discovered in bogs, indicating that it flourished at an earlier time. Apart from the spruce planted in Alta and Tana, spruce is only found growing naturally in Pasvik and Anarjokkdalen (east of Kautokeino along the Finnish border).

Common throughout the Masi region is the birch (Betula odorata), found on the lower reaches of the Vidda up to approximately 1,080 feet elevation. In Masi village specimens of this species are reputedly the largest and oldest to be found in the whole of the region. Another birch species (Betula nana), grows higher up on the mountains of the district. All varieties of the birch are utilized for fuel in the district.

Numerous other deciduous species occur to a greater or lesser extent. Examples of the alder species (Alnus incana) appear occasionally in damp terrain either as a low-lying scrub, or as individual trees reaching twenty-four feet in height. Large numbers of aspen (Populus tremula) grow along the valley walls on both sides of the Kautokeino and Alta Rivers and in many parts of the Masi region. Those in Masi reach heights of forty feet; the same species, however,

can be found in stunted form (7-8 feet) as high as 1,050 feet above sea level.

Other tree species include the ~~rowan~~ tree (Sorbus aucuparia), bird cherry (Prunus padus), current tree (Ribes rubrum) and juniper (Juniperus communis). Varieties of willow (Salix) occupy the banks of the rivers and can be found high in the mountains in bogs or on damp terrain.

Of importance to the reindeer industry is the abundance of lichen in the Masi region. Commonly, winter feed consists of the lichen (Cladonia rangiferina) and the Iceland lichen (Cetraria islandica). During the spring migration from the district, when the lichens still lie snow-covered and pasturage is sparse, the animals feed on an assortment of forage including twigs and dwarf birch.

Bogs abound in the region. Most common is the Sphagnum peat bog. The bogs are usually the site of the cloudberry which grows (and flowers in good years) up to an elevation of 1,920 feet. A good price can be obtained for the berries which are relied upon as a source of cash income by many of the Lapps in the fall. Just how important they are to the budget of many households in Masi was pointed out by the principal of the local Lapp boarding school (Inter-nat) when he remarked, "a bad summer like this one (1965) means no cloudberry and therefore many with unpaid taxes and debt. For

this, the municipality will have to make up the difference in loans this winter."¹

A botanical curiosity, the Baikal mjelt (Oxytropis deflexa norvegica), grows near Masi and in one other locale near Lake Baikal. According to the Norwegian botanist, Knut Faegri, the plant is the survivor of the Würm glaciation.²

3. Animal Life

During the early part of this century wild reindeer were still found in the district. Steen, in his account of Masi, reported the existence of a herd of 300 in the area near Baeskades, but the herd has long since disappeared.³

In the last century the bear population near Masi was reportedly large, but their numbers have since been severely reduced. Bears were hunted by the Lapps for meat and hides, and frequently the Lapps paid taxes in bear skins to the "birkarlar." Certain rites were observed in hunting the bear and bringing home the kill, for the bear, in Lapp mythology, is invested with special powers.

¹Pers. comm. T. L. Guttormsen, Masi, 1965.

²K. Faegri, Norges Planter I, Oslo, 1958, p. 320.

³A. Steen, Masi: En Samebygd, Samiske Samlinger VI, Utgitt Av Norsk Folkemuseum, Universitetsforlaget, Oslo, 1963, p. 19.

Reindeer herds are prey to a number of predators. Wolves, bears and wolverines are a menace, and calves may be attacked by lynx and even eagles. Attacks by wolves upon reindeer were apparently more frequent in years before World War II when wolf packs moved into Finnmark during the winter from the forests of Finland and Russia. After construction of the road to Masi in 1932, wolves were seldom reported in the district.⁴ Similarly, the wolverine, which was once common in the Masi region, is now rare.

Many of the species of bird life common to Finnmark are found in the Masi region. Some of the varieties of mountain and tundra birds are a source of income seasonally to the Lapps. Of these perhaps the most important is the ptarmigan.

Formerly local fishing was widespread as a means to additional food. However, to a large extent, this is no longer so though some households in Masi still augment their diet by this means. Most valuable to the inhabitants of Masi is the white fish (Coregonus lavaretus), a species abundant in local lakes. Other varieties of fresh water fish frequently sought include perch (Perca fluviatilis, not especially desired), Arctic grayling (Thymallus thymallus), Great Northern pike (Esox lucius, not widely sought), three species of trout (Salmo croix, and the brown trout, Salmo trutta and Dolly Varden (Salmo alpinus).

⁴Ibid., p. 22.

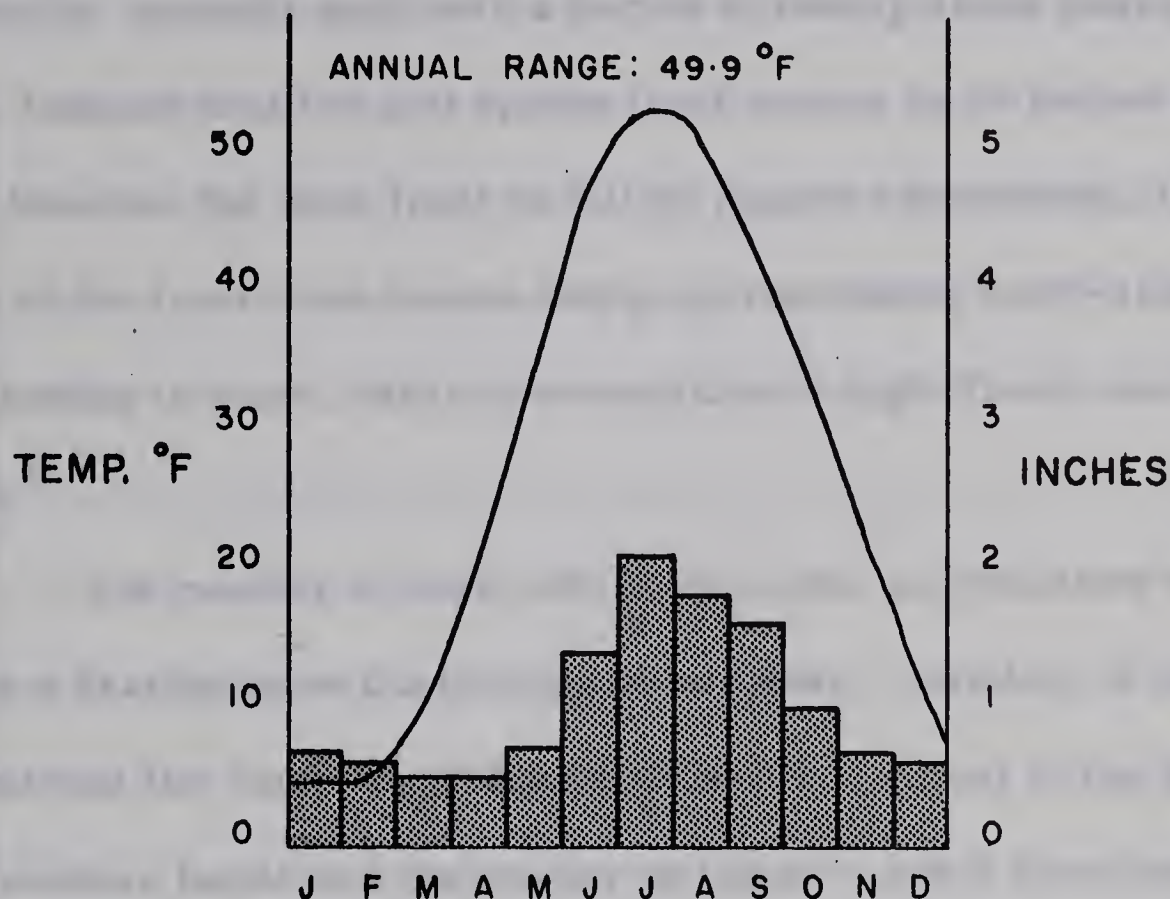
In 1960 efforts were made to stock local lakes and rivers with fish in order to attract more sport fishermen to the district. Apparently, however, little interest in the project was forthcoming and only the Masi River was stocked. Because of the rapids lying downstream from Masi, the excellent salmon which have made the Alta River famous, are prevented from reaching Masi. However, local rivers and lakes offer good trout fishing and a number of sport fishermen visit Masi during the summer.

4. Climate

The climate of Masi and region is characterized by a pronounced continentality. Climatic data for Masi is not available but observations for selected stations in the interior may be considered representative. In Figure 14 temperature and precipitation values for Kautokeino, the station closest to Masi, are tabulated and shown graphically. It should be noted, however, that there is considerable difference in the sites of Masi and Kautokeino and the micro-climates of the two centres therefore may be expected to vary. The settlement of Kautokeino lies exposed on all quarters and during winter is notorious for the bitter winds which sweep over the plateau. Masi, on the other hand, because of its situation in the valley of the Kautokeino River is much less exposed.

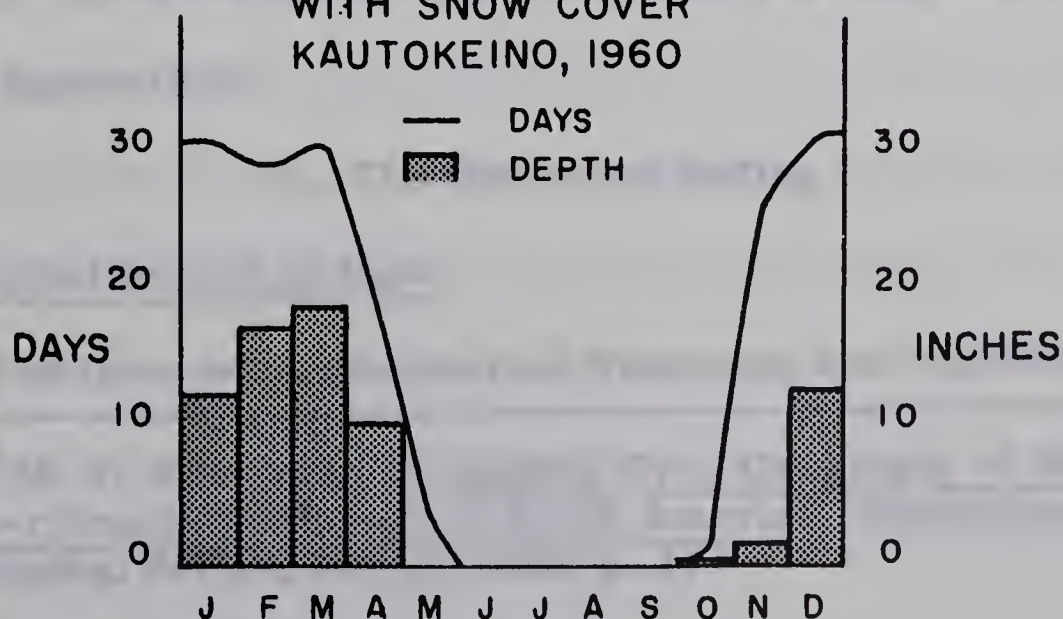
The length of the frost-free period in Finnmark is short and

MEAN ANNUAL TEMPERATURE AND PRECIPITATION, KAUTOKEINO



Source: M.Y. Nuttensen, International Agro-climatological Series No. 12, 1950.

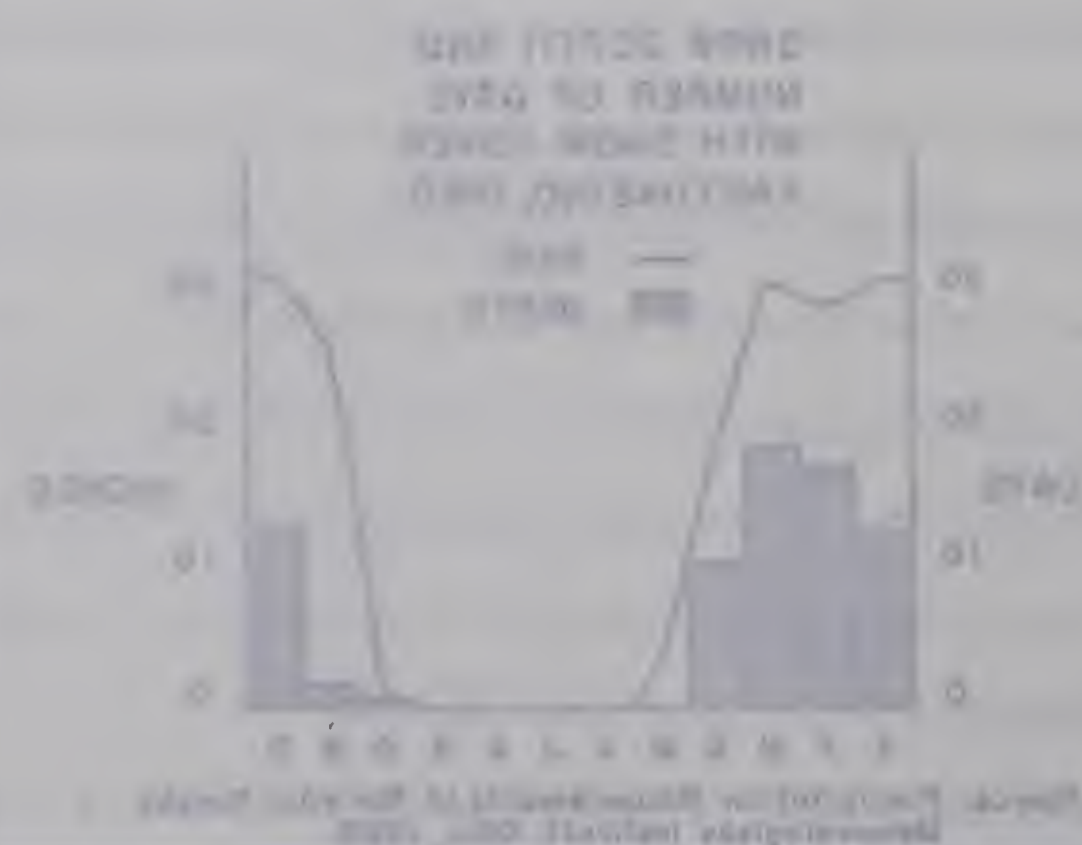
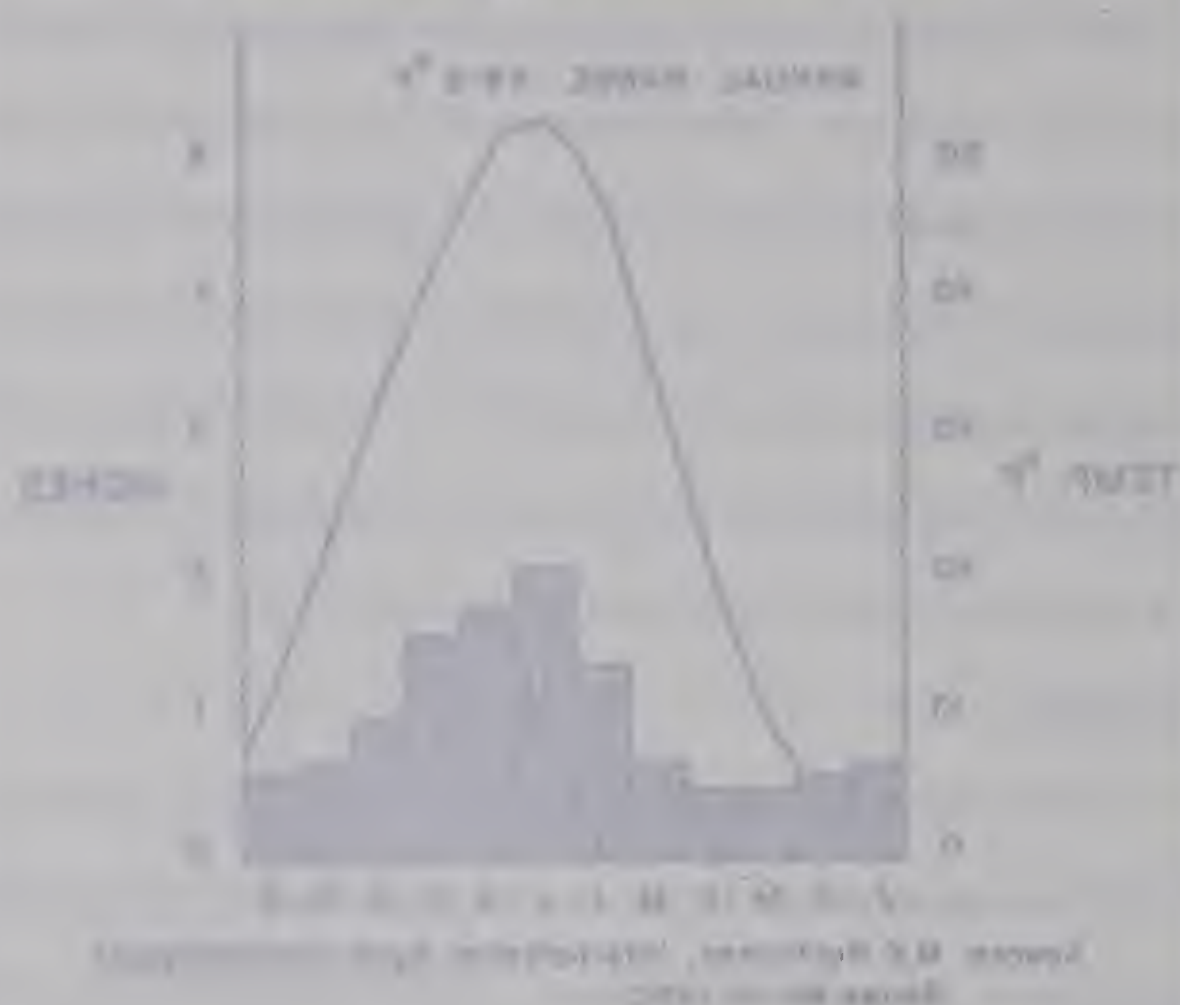
SNOW DEPTH AND NUMBER OF DAYS WITH SNOW COVER KAUTOKEINO, 1960



Source: Precipitation Measurements in Norway, Norske Meteorologiske Institutt, Oslo, 1960.

Figure 14

MEAN ANNUAL TEMPERATURE AND PRECIPITATION, KATOWICZ



severely hampers any widespread or intensive agriculture. As an example, records kept over a period of twenty-three years at Karasjok, indicate that the last spring frost occurs on or before June tenth, and likewise the first frost in fall by August seventeenth, the duration of the frost-free season being approximately sixty-eight days.⁵ According to Steen, Masi is susceptible to night frosts early in August.⁶

The number of days with snow-cover and the snow depth have a bearing upon the herding of reindeer. Earlier, it was emphasized that the condition of the snow may be critical to the survival of reindeer herds and the quality of lichen. Apart from temperature and precipitation, ground hydrology and local topography will also affect snow conditions. Seasonal snow-cover and depth of snow is recorded and illustrated graphically for Kautokeino in Figure 14. Further records for selected stations near the Masi region are tabulated in Appendix E.

B. The Historical Setting

1. Early Settlement in Masi

The first settler in interior Finnmark was reputedly a Swedish

⁵M. Y. Nuttonsen, Ecological Crop Geography of Norway and its Agro-climatic Analogues in North America, International Agro-climatological Series, No. 12, 1950, p. 32.

⁶Steen, op. cit., p. 116.

farmer, Ivar Kolare, who lived in Masi before 1670.⁷ Doubtless long before Kolare, Lapp families hunted in the region for wild reindeer and fished in the local lakes. Evidence of pitfalls and fences to trap the wild reindeer in the district around Baeskades (where wild reindeer still existed early in this century) implies that groups or families cooperated in the hunt, possibly overwintering in tents or turf huts (gammer) near Suolovuobme where there is ample fuel. There is no evidence to suggest that reindeer nomadism had yet evolved but probably the Lapps used tame reindeer as decoy animals for hunting the wild reindeer. As far as any sort of permanent settlement elsewhere in the interior of Finnmark is concerned, it was not until the mid-eighteenth century that this developed. On the other hand, settlement continued periodically in Masi after the arrival there of Kolare.

Until 1751 the district of Kautokeino was under the civil and clerical jurisdiction of Sweden, but this did not include the Masi district nor the coastal districts. Nevertheless, the Swedish authorities consistently tried to gain these districts and encouraged Swedish citizens to settle in the disputed territory. Enticement to settlement was in the form of a fifteen year exemption from taxes, freedom from military service, and other concessions. Thus Kolare's appearance in

⁷ Ibid., p. 25.

Masi in 1670 was nothing more nor less than a prelude to an eventual anticipated Swedish expansion to the Finnmark coast. Still, it was not until fifty years after Karl XI's proclamation of 1673 granting the concessions that the first Swedish immigrant settled by the Karasjok River, and even later before there was permanent settlement in Kautokeino.

In pursuance of their expansionist policy, the Swedes built churches in Inari (1640), Kautokeino and Utsjok (1701). A similar attempt was made to gain a foothold in the Altafjord, but this failed. Thoroughly alarmed, the Norwegians, as a counter-measure, built a fortress on Arøya Island in the Altafjord. Further, the Norwegian missionary, Thomas von Weston, who had been instructed to build a church at Bossekop (the site of a Lapp market near Alta) for the Coast Lapps and nomads living in the Masi district, instead directed that it should be built in Masi. Log buildings were therefore bought and dismantled in Alta and transported to Masi where the church was erected in 1720.⁸

Before 1720 the two successive Swedish priests assigned to the Kautokeino pastorate lived in Masi. The reason for this is unclear, and while agricultural potentialities are much better in Masi than in

⁸Ibid., p. 114.

Kautokeino, this could hardly have been the explanation. At any rate, the boundary settlement between Denmark (for Norway) and Sweden in 1751 ended Swedish claims to the Masi region.

2. Early Reindeer Nomadism in the Masi Region

There has been little specifically written about the development of reindeer nomadism in the Masi region. During the period Masi's first church was in use (1721-1751) there were no permanent inhabitants in Masi and in Kautokeino there were no Settled Lapps or Kvaens until around 1720. Though there were no residents in the Masi region as yet, the church was used by Alta nomads who had their winter grazing in the district around Masi.

Full economic dependence upon reindeer under an intensive system of herd management had not fully developed up to this time. Herds were still small and the Mountain Lapps were mainly dependent upon hunting and fishing to provide the bulk of their food requirements. In this context, we need only repeat the observation of the Kautokeino priest, Johan Junnelius, who, in 1740, reported that "the Lapps move hither and thither since few of them are able to support themselves on reindeer herding alone."⁹ On the other hand, it was equally evident, according to Junnelius, that the Lapps had established definite fall,

⁹ P. L. Smith, Kautokeino og Kautokeino Lappene, Instituttet for Sammenlignende Kulturforskning, Oslo, 1938, p.116.

winter and spring grazing territories which they considered their own and to which they were returning consistently year after year. Moreover, a distinct yearly schedule of movements had emerged associated with the migrations to and from the winter and summer pastures. Junnelius noted that, depending upon the grazing conditions and the opportunities for hunting and fishing, the Mountain Lapps remained, from the thirtieth of November until the second of February or later, at their winter pastures in Kautokeino district.¹⁰

Understandably, the nature of Mountain Lapp life at this period more or less precluded any form of permanent dwelling. But, on the other hand, Lapp movements were by no means entirely unscheduled or formless. Broadly speaking, seasonal movements alternated between two distinct environments, the coastal and the inland. Within either of these two regions a number of factors governed the movement and location of the Mountain Lapps. Not the least of these were availability of game, fuel, and range. Later, as the relationship between reindeer and Lapp became more symbiotic, movements came to be increasingly dictated by the requirements of the animal and less so by other considerations.

¹⁰Loc. cit.

A factor which contributed toward the emergence of Mountain Lapp centres of concentration was the location of the church. In turn the location of the church and church property (kirkestedet) may have been determined by proximity to the winter grazing territories. The effect in the long run, nonetheless, was the establishment of a fixed area (to call it point would imply too close a concentration) between which migrations alternated with coast territories. Eventually this led to the development of some form of permanent settlement.

Although permanent agglomerations of Lapp dwellings had not yet evolved in this early period, the Lapps tended to congregate at the winter grazing territories. Smith, in his historical account of the Kautokeino Lapps, remarks that "from Andersmesse (November 30) to Kyndelmesse (February 2), and still later the Lapps remained a 1/2, 1, 2 and at the most 3 Norwegian miles* from the nearest church."¹¹ Junnelius observed the same general behaviour and noted that after Larsmessetid (around August tenth) the Lapps and their herds moved from the coast to the mountains and remained there until Andersmessetid (November 30).¹² Though the Lapps were

¹¹ Loc. cit.

* Approximately nineteen English miles.

¹² Ibid., p. 114.

usually not seen, those who could be spared from work with the herds would appear at the church on Sundays and holidays.

The situation at Masi must have been very much the same. In summary, reindeer nomadism had not as yet fully evolved; there was some milking of reindeer, but hunting and fishing was widespread as a means of subsistence; a schedule of migrations alternating between coast and interior (with possibly sites for calving and rutting) for seasonal grazing had been established, but as yet no permanent dwelling or fixed settlements. On the other hand, evidently the establishment of churches (and the conversion of Lapps to Christianity) was exerting an influence upon the location of Mountain Lapp winter camps.

With respect to the location of winter and summer grazing districts, it was not until the beginning of the 1700s that these were noted. Interestingly, the records are sufficiently detailed in some cases that the name of the Lapps utilizing various districts are known. The first Kautokeino Lapp with summer pasture at the coast was a Nils Jonsson, in 1707.

The designation of fixed grazing districts for individual Kautokeino Lapp families or sii'dât evolved after 1700. Before 1700 there were so few reindeer involved that the families merely established themselves at the winter range near the church and let their animals

forage together. Herd numbers had increased so rapidly by 1740, however, that it became necessary to organize family and sii'dâ rights to fall, winter, and spring ranges. Probably at first this was done spontaneously but, by 1756, according to a court record, a regulation had been drafted requiring all nomads to register with the sheriff (lensmann) in order to be assigned to separate grazing districts.¹³

The distribution of the winter and summer grazing districts of the Kautokeino Lapps is shown on the accompanying map (Figure 15). Nomads from the Masi region had their winter range in the tract lying between Masi and Alta, as did the Alta nomads. According to Major Schnitler, they were the only people to be found there. The exact number is not known, but Schnitler noted that fourteen families (about seventy individuals) were registered as belonging to the Masi church.¹⁴ In respect to the Kautokeino winter districts, Smith estimated, from the census of 1741, that there were twenty-eight families distributed over the various locations (Figure 15). Steen, however, is of the opinion that not all the grazing districts are repre-

¹³ A. Steen, Kautokeinostudier, Samiske Samlinger III, Utgitt av Norsk Folkemuseum, Oslo, 1956, p. 81.

¹⁴ Major Peter Schnitler was sent by the government to investigate the situation and distribution of the Lapps prior to the boundary agreement between Sweden and Norway.

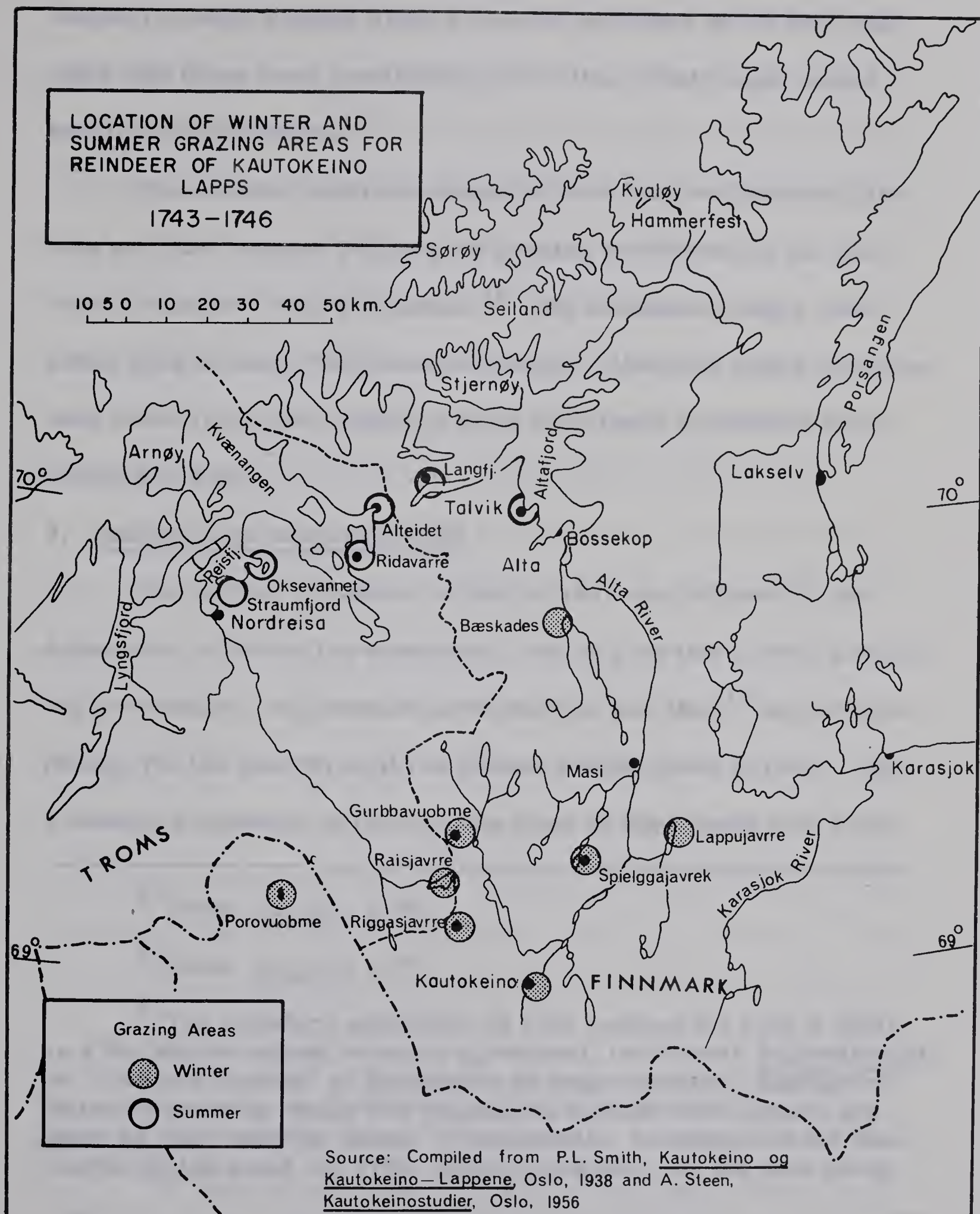


Figure 15

sented by Smith's figure since a Swedish document of the time indicates that there were considerably more than twenty-eight nomad families in Kautokeino.¹⁵

The summer districts appear to have been well-defined, the Alta and Masi nomads utilizing the grazing territories on the east side of Altafjord toward Kvalsund.¹⁶ The Kautokeino Lapps used areas lying between Nordreisa and Talvik. Mountain Lapps and reindeer herds from other districts were to be found distributed from Tromsø to Tana.

3. Settlement in Masi after 1874

The arrival of Kolare in Masi in 1670 was followed by the appearance of several new settlers. But by 1740 there were, according to Schnitler, only nomads in the district and Masi¹⁷ lay desolate (except for the church) until two Kvaens settled there in 1840. After a smallpox epidemic in 1850, no one lived in Masi again until 1874.

¹⁵Steen, op.cit., p. 82.

¹⁶Steen, op.cit., p. 77.

¹⁷The boundary agreement of 1751 reduced the role of Masi as a Norwegian outpost since, by agreement, the former Fellesdistrict, or "Common district" of Kautokeino no longer existed. Kautokeino district now being wholly Norwegian, the nomads used it more and more as their meeting place. Consequently, attendance at the Masi church declined and, by 1768, ceased altogether for the time being.

Thereafter, permanent settlement continued unbroken up to the present time.

In the Mountain Lapp districts of Finnmark, the Kvaen immigrants had adopted the customs and language of the Lapps quickly so that by the second or third generation they were indistinguishable from them. By 1835 the settled inhabitants of Lapp centres such as Karasjok and Kautokeino were mainly of Kvaenish descent and Quigstad observed that they could "only be distinguished from them [the Lapps] by the fact that they possess [permanent] dwellings."¹⁸

The Kvaens were notably proud and industrious people and proved themselves well able to contend with their new environment. A rigorous background of pioneering in Finland served them in good stead as settlers and they were responsible for the first attempts at agriculture in Finnmark. Masi offered attractive agricultural possibilities. Far more so than Kautokeino, for example, where "without reindeer-nomadism in the mountains around it would have been unthinkable that a community of settlers could have survived."¹⁹ Masi, on the other hand, had much land to offer and the first settler, in

¹⁸J. Qvigstad, Den Kvaenske Invandring til Nord-Norge, Tromsø Museums. Årshefter 43:1, 1920 in R. Paine, Coast Lapp Society I, Tromsø Museums Skrifter Vol. IV, Tromsø, 1957, p. 68.

¹⁹H. Henriksen, Norges Finnemisjonsselskap, Årsmelding 1949, in R. Paine, Coast Lapp Society I, Tromsø Museums Skrifter, Vol. IV, Tromsø, 1957, p. 68.

1874, Johan Hetta, in the words of Steen "got almost all the land he wanted."²⁰ In addition to agriculture, there were plentiful fish and game in the district. In spite of its advantages (agriculture, fuel) Masi did not expand to the extent of Kautokeino and indeed lay desolate in 1865 at a time when Kautokeino boasted eleven farmsteads.²¹ By 1910, however, when Kautokeino had twenty farmsteads, Masi had eight.²² Smith comments:

Strangely enough, there is still [1865] no permanent settlement in Masi where conditions should be better both with respect to agriculture and fuel than in all other places in Kautokeino.²³

Following the arrival in 1874 of the first Kvaen family, the settlement received new families from time to time, nearly all of whom were descendants of the original settlers in the region. By what manner the population of Masi grew over the period between original settlement and more recent times, it is not possible to say. Steen records the names of individual families and the year of their appearance in Masi, but it is not entirely clear whether these were

²⁰ Steen, op. cit., p. 30.

²¹ Smith, op. cit., p. 298.

²² Loc. cit.

²³ Loc. cit.

all that came. The following list of settlers, dates of arrival in Masi and general location of their original dwelling is compiled from Steen's account of Masi. The map in Figure 16 shows the sites of early settlement in Masi (1874-1932) mentioned by Steen.

<u>Date</u>	<u>Name</u>	<u>Site of Dwelling</u>
1874	Johan I. Hetta	✓ Čievrramielle
1878	Per Eriksen Eira	Macinjargga (near Hirssaluokka)
1880	Nil Turesen Turi	Hirssaluokka
1886	Johannes Gaup	Southeast from Hirssaluokka
1895	Klemet J. Hetta	Ruogunjargga
1896	Ole Johansen Hetta	✓ Čievrramielle
1903	Johan A. Bongo	Øvre Masi (near the Masi River)
1911	Per A. Somby	Hirssaluokka
1911	Ture Nilsen Turi	?
1930	Mikkel M. Hetta	?

Although conditions for profitable agriculture are unfavourable in Finnmark, among the Settled Lapps of Masi farming constitutes an important activity. Formerly, the products of the farm were entirely for home consumption and included milk, butter, meat, and hides. Improved communications, however, have made it possible for the farmers to sell their milk to a dairy in Alta. Some farms have five to six cows, a horse, sheep, and a few have goats. Field crops include barley or oats and hay for fodder. Grain does not ripen but some villagers plant potatoes, turnips, and carrots.

The construction of a hut or fjellstue for overnight stopovers in 1890 brought numerous travellers bound for Kautokeino or Swedish Lapland to Masi. They came by foot or with saddle and pack horses

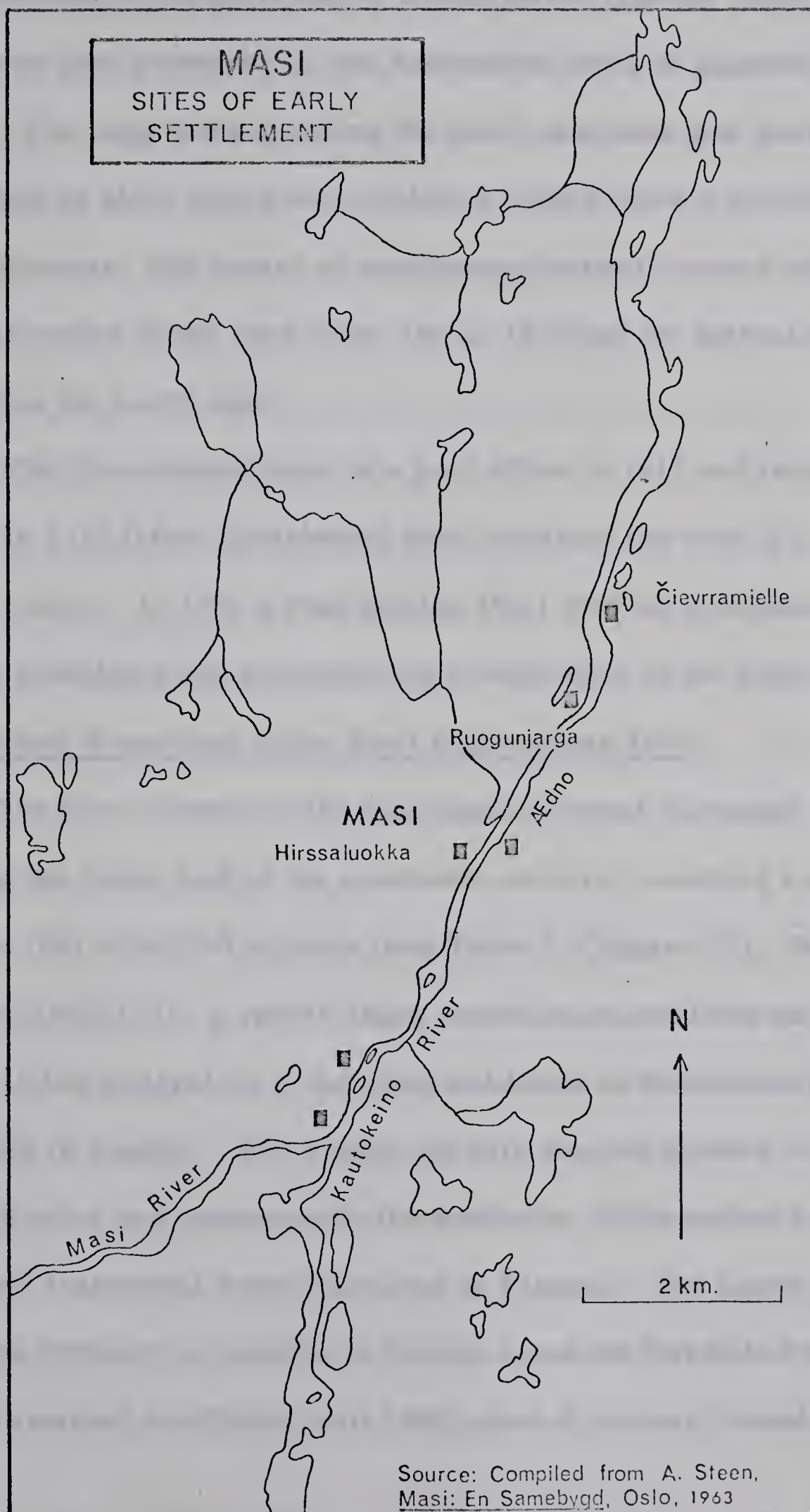


Figure 16

via Baeskades to the north end of Ladnatjavrrre (Ladnat Lake). From here they journeyed up the Kautokeino River to Kautokeino village. The hard work of poling the boats upstream was generally undertaken by Masi Lapps who worked willingly since it provided cash. However, this means of employment came to an end with the construction of the road from Alta in 1932 and its extension to Kautokeino ten years later.

With the establishment of a post office in 1912 and telephone service in 1919 (after Kautokeino) Masi assumed the role of a small service centre. In 1932 a road linking Masi with the provincial system was completed and stimulated new settlement in the district.

4. Reindeer Nomadism in the Masi Region after 1874

The size of herds in the Kautokeino district increased rapidly during the latter half of the nineteenth century, reaching a peak figure in 1891 of 96,700 animals (see Table 7, Chapter IV). Between the years 1853-1871, a rather sharp reduction in numbers had occurred due to the emigration of families and herds to Karesuando (and Enontekiö) in Sweden. The reason for this was the closure of the Finnish border and consequently the exclusion of Norwegian Lapps from their traditional winter pastures in Finland. The Lapps overcame this difficulty by moving to Sweden since the Swedish-Finnish border remained unaffected until 1889, when it too was closed. After

this many of the families returned to Kautokeino.

It is difficult to say whether the border closures had any particular effect upon the nomads from Masi district. In the accounts of the time no mention is made of any families leaving the district for Sweden. If anything, the removal of herds would have taken pressure off the Norwegian lichen pastures, except that the closing of the Finnish border so reduced the area of winter grazing available that the large reindeer population formerly supported could no longer be maintained. It is possible that the agreement between Sweden and Norway, the so-called "Felleslappeloven" or "Common Lapp Law" of 1883, whereby a designated number of Swedish nomads were allowed to bring their herds into Norway in summer in return for the privilege of Norwegian Lapps to take their herds into Sweden in winter, may have had some effect upon the Masi Lapps.

To reconstruct a detailed picture of the progress of reindeer nomadism in Masi district from the period between the turn of the century and World War II would require extended field research and the possession of records and personal accounts. In the absence of these one must again assume that the developments in the case of Masi district did not differ unduly from the situation in Kautokeino. There is no reason to doubt that, as in Kautokeino, the Masi herds increased in size during the second half of the nineteenth century. Similarly,

grazing territories, both for winter and summer, due to the increased size of herds, were now rather clearly demarcated with each sii'dâ or reinbyer* possessing by mutual agreement designated grazing rights.²⁴

During the course of the nineteenth century the Mountain Lapps became increasingly aware of their independent and unique way of life. The Mountain Lapp's mastery of the plateau environment and his comparative independence from the commercial economy had led him, in Gjessing's words, to "consider himself the defender of Samish traditions and culture and even resulted in changes in the national dress."²⁵ Large herds had become a mark of wealth: Aslak Mathisen Logie from Kautokeino in 1865 owned 2,500 reindeer. Several other owners had herds in excess of 1,100 and there were ten families with at least 1,000 animals.²⁶

* A group of families who herd their reindeer together.

²⁴ As early as 1888 a regulation requiring all reindeer herders to register their earmarks was introduced. Prior to this, there was no control over these, each herder using what marks he wished but each family maintaining its own tradition. The proliferation of marks made it necessary to introduce some measure of control over them. In special circumstances large marks (initials) are cut into the hair of the flanks.

²⁵ G. Gjessing, Changing Lapps, Monographs on Social Anthropology No. 13, London School of Economics and Political Science, London, 1954, p. 59.

²⁶ Loc. cit.

The cycle of yearly migrations to and from the coastal districts was a firmly entrenched pattern of movement for the Mountain Lapps at the time the first Kvaen settler arrived in Masi. Previously, migrations to summer grazing along the coast and on the offshore islands of Finnmark had not entailed the movement of large herds or equipment, nor were reindeer entirely the Lapps' principal concern since the expeditions to the coast were mainly for the purpose of hunting and fishing. However, the advent of large herds and long migrations meant that much of the winter equipment (clothing, sleighs, harness, dried meat, etc.) used in the initial stages of the spring migration had to be left by the wayside since to continue with it was an unnecessary encumbrance. Initially such equipment was deposited at a prominent place along the route to be collected later on the return journey from the coast in the fall. Eventually, in order to discourage wild animals from pilfering these stores, small stabbur or storehouses were constructed well above ground. By degrees as settlement advanced these stabbur, wherever possible, were built by the houses of Settled Lapps where they could be watched during the summer. In turn, summer equipment not required on the return journey to the winter pastures was left until the following spring.

The progressive establishment of more secure sites for the storing of equipment accessible during migration coincided with the

pronounced development of fixed routes of migration. Formerly this had not been the case, movements being very loosely organized and sites for encampment determined largely by the presence of good possibilities for hunting wild reindeer. Later, with the enlarged herds, it became more and more necessary, for the sake of the pastures and to prevent mixing of herds, that each herd keep more or less to a distinct route. The location of camps en route was dictated primarily by the presence of shelter and the availability of fuel. During winter this latter item was, of course, of prime concern and meant often that the family had to camp many miles from the herd. Herders then went out from the main encampment returning at intervals of several days or weeks.

From the mid-point of the nineteenth century to the years before the Second World War, the pattern of Mountain Lapp life in Finnmark progressively advanced toward a schedule of seasonal movements of the Lapps and their reindeer and more permanency of settlement in the winter and summer camps. A distinct migration route linked the summer and winter camps but several alternatives were available if the main route could not be used. Along the migration route more or less fixed sites for calving and rutting were selected and the families and their herds returned to these year after year.

From the limited information available it would appear that,

until the introduction of the road to Masi in 1932, conditions of Lapp settlement and migration conformed by and large to that which has been outlined and presumably evolved in much the same manner. However, the construction of the road to Masi introduced a new epoch in the affairs of the village, both for the Settled Lapps and the nomads. For the nomads it profoundly influenced the conditions of migration for the families could now be transported by bus or truck between the winter and summer grazing areas, the journey taking only a few hours. Meanwhile, the herds continued to use the ancient routes, but were now attended only by the herders. As well as allowing easy and rapid transport of families the use of vehicles also meant that equipment and belongings were readily moved. On the other hand, the nomads were now, more than ever, heavily committed to the demands of a money economy.

Ease of transport to Alta (45 miles from Masi) abolished the necessity of the Lapps hauling meat in winter to Alta and returning with bought goods. Instead, it was possible to hire a truck for this and in order to facilitate the slaughtering and hauling of meat, slaughtering areas were always established near the road.

With the obvious advantages the road afforded to the life of the nomad, it is not surprising that centres such as Masi and Kautokeino became attractive as places near which to establish permanent

winter quarters, and in the case of Masi there was a very decided growth in settlement after the construction of the road.

In a study directed at determining the factors influencing the location of nomad settlement, Vorren found the situation as described by reindeer inspector K. Nissen in 1911-1912 virtually unchanged up until World War II (see Chapter IV).²⁷ But with the expansion that took place in Finnmark and the extension of communications following the war, the form of Lappish settlement was clearly altered. With particular reference to Kautokeino Reindeer Circuit (Reinsogn)* Vorren was able to make the following observations: In 1911-1912 the settlement pattern as described by Nissen was decidedly a "nomadic" one with only nine of the 146 families that practised reindeer nomadism in the district residing in permanent dwellings in the winter half-year. All the rest followed their herds the year round. The explanation for the behaviour of the nine families seemed to rest in the fact that grazing area, migration route, and dwelling place all coincided. In other words, these families were still able to maintain close contact with their herds from a single permanent dwelling. On the other hand, Vorren's investigations of Kautokeino in 1952-1957 revealed that winter dwellings had now collected around the lines of communi-

²⁷ K. Nissen, "Lapper og Ren i Norge," Det Norske Geografiske Selskabs Aarbok, Vol. XXVI-XXVII, 1914-1916.

* Finnmark is divided into four Reinsogn or "Reindeer Circuits." These are Kautokeino, Karasjok, Polmak and Varanger.

cation and permanent settlements to the effect that the "nomadic" picture of Nissen was now completely reversed. Clearly, as in the case of Kautokeino, the presence of communication linkages had drawn nomad settlement toward district centres with, as Vorren observed, "a tendency toward a steadily larger integration into the society of the permanent residents with its benefits and a steadily increasing break up of the association between family and herd."²⁸ There is little doubt that in the post-war era Masi exhibited the same behaviour and tendencies as Vorren observed to be the case for Kautokeino. In view of its direct connection with the main Alta-Kautokeino road (and snowmobile connection with Karasjok and Kautokeino in winter) the location of Masi was such as to make it possible for the nomads to abandon all spring and fall camps (and eventually summer camps) and simply to operate from a single permanent dwelling situated in or near Masi. In so doing the weakening of close contact with the herd was undoubtedly one of the consequences but, on the other hand, it permitted the nomads to share a standard of living more commensurate with their counterparts in Norwegian society.

C. The Occupation and Post-war Reindeer Herding

1. War-time Destruction

Steen noted that the period between the two World Wars was

²⁸Pers. comm. Ø. Vorren, Tromsø, 1965.

one of difficult times for most of the inhabitants in Masi. Under the occupation, however, opportunities for work were good and there was a ready market for the sale of Lappish articles.²⁹ In the face of the German retreat from Norway in 1944, Masi suffered the common fate of all settlements in Finnmark, most of it being burned to the ground. Of the thirty or so houses in Masi, including the church, twenty-one were burned and the inhabitants were forced to evacuate their livestock and find shelter in the surrounding countryside. The primitive gamme (turf huts in the shape of a cone) or small crude log buildings that had been the typical dwelling in Masi were nearly all destroyed so that, with the exception of one house, none of the buildings in Masi remain from the pre-war era (several stabbur built long before the war are still in use, however).

2. Masi Reinbyer

The distribution and location of the herding groups (reinbyer)* belonging to Masi and region are shown for 1954 in Figure 17. As best as can be determined there were twelve nomad households (59 individuals) living in Masi at the time as opposed to approximately seventeen households (84 individuals) in 1960. None of them were restricted

²⁹ Steen, op.cit., p.48.

*The possibility of the number of reinbyer changing is quite likely, though not frequent. Thus, for example, in the summer of 1954 Kautokeino had twenty-five reinbyer, in 1952 twenty-seven, and in 1912 twenty-nine.

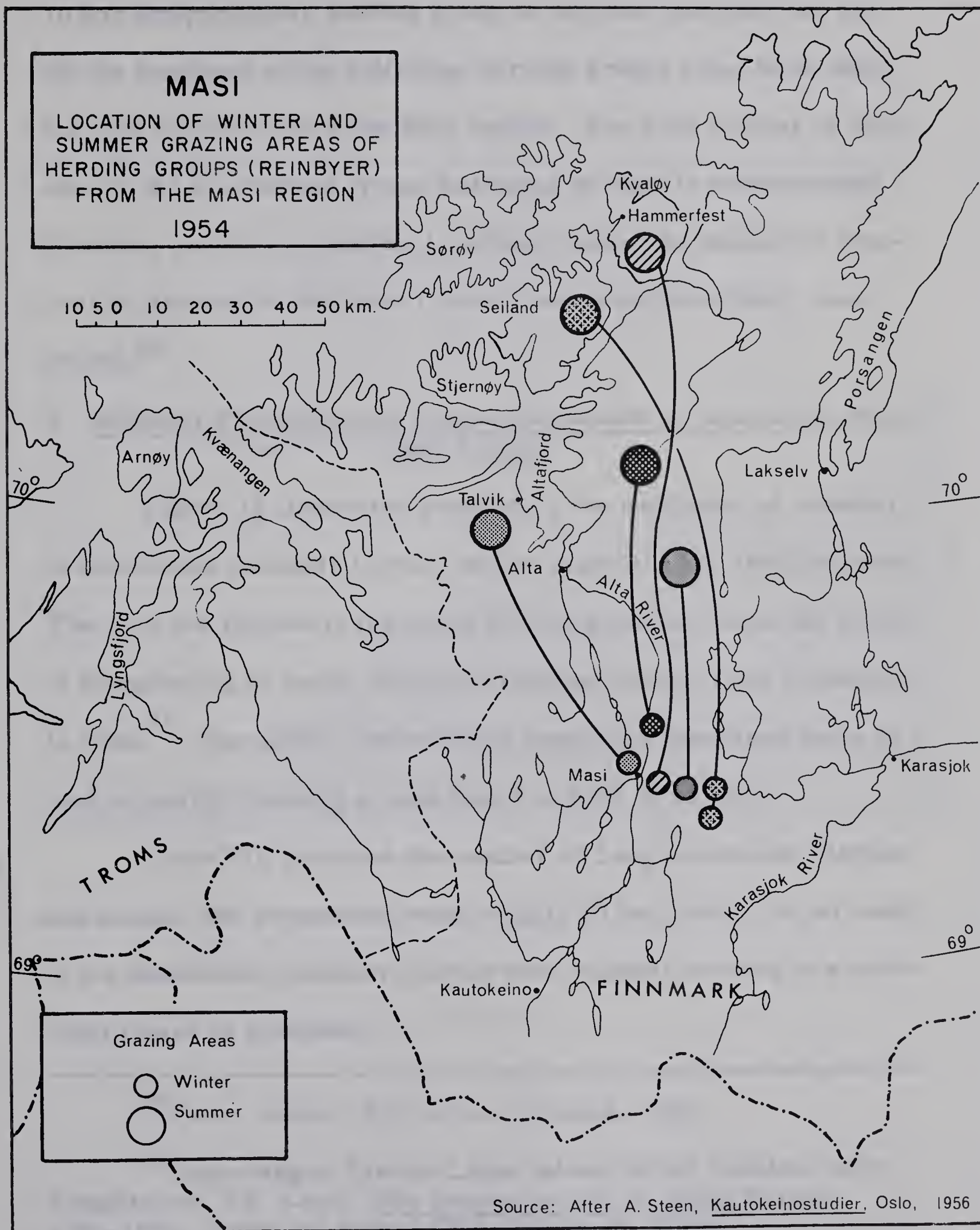


Figure 17

to any one particular herding group in the Masi district, nor did all the members of the individual herding groups come from Masi, but they did come from the Masi region. The total number of reindeer in the six herding groups belonging to Masi is undetermined. However, in 1954, according to official count, the number of reindeer in Kautokeino Reindeer Circuit, which includes Masi, was 48,000.³⁰

3. Reindeer Population and Nomad Households in Kautokeino Reindeer Circuit

Figure 18 illustrates graphically the population of reindeer in Kautokeino Reindeer Circuit for the years 1948 to 1964 inclusive. The very low figures in the years following the war were the result of slaughtering of herds during the German retreat from Finnmark in 1944.³¹ Thereafter, the reindeer population increased more or less regularly reaching a peak figure in 1964 of 69,064.

Table XIX indicates the number of Lapp households (Settled and nomad, the proportion being roughly 20 per cent to 80 per cent) in the Kautokeino Reindeer Circuit with reindeer herding as a principal means of livelihood.

³⁰ Pers. comm. Ø. Vorren, Tromsø, 1965.

³¹ According to Trevor Lloyd, about 50,000 reindeer were slaughtered. (T. Lloyd, The Reconstruction of North Norway 1945-1955, Technical Report ONR 438-03-04, 1956.)

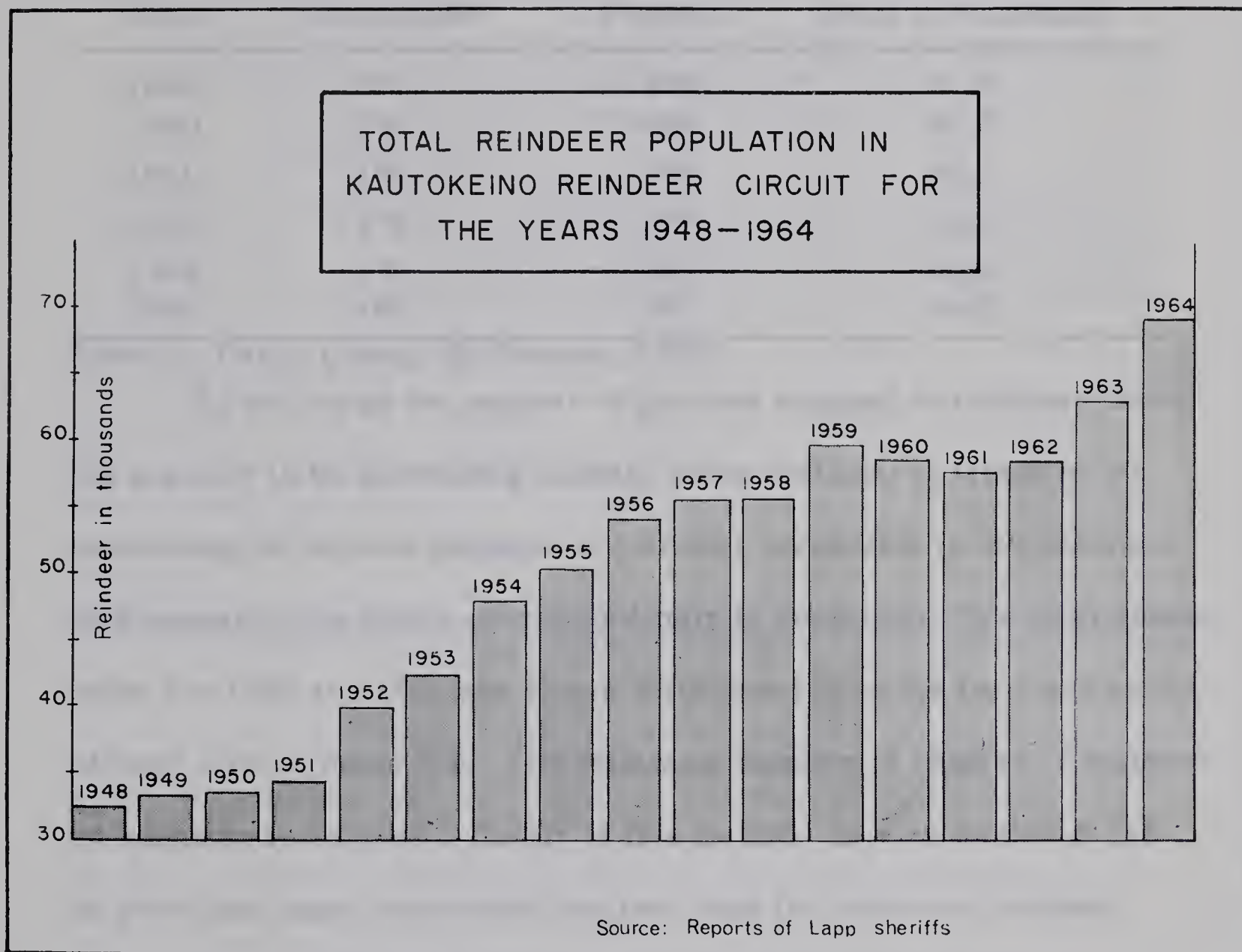


Figure 18

Table XIX--Number of Households with Reindeer Herding as Principal Livelihood, Kautokeino Reindeer Circuit, 1959-1964

Year	Households	Persons	Percent of Total in Finnmark
1959	171	825	62.6
1960	176	822	59.6
1961	174	850	60.0
1962	176	877	59.0
1963	173	836	58.9
1964	189	881	58.5

Source: Pers. comm. Ø. Vorren, 1966.

By and large the number of persons engaged in reindeer herding appears to be increasing slightly in the district; in terms of the percentage of persons engaged in reindeer nomadism in the province of Finnmark, the figure correspondingly is declining. The total households for 1960 and 1961 are shown distributed over the four categories of herd size in Table XX. The minimum number of reindeer considered adequate to support a family of five is 200. In view of this it can be seen that many households had less than the minimum number.

Table XX--Herd Size According to Households, Kautokeino Reindeer Circuit, 1960 and 1961

Year	Up to 100	100-150	150-200	Over 200	Total
1960	51	34	24	67	176
1961	39	35	30	70	174

Source: Pers. comm. Ø. Vorren, 1966.

In conclusion Table XXI is presented in which the average in-

come of a nomad is compared in absolute and relative figures with that of four different income categories in the municipalities of Karasjok and Kautokeino (includes Masi).

Table XXI--Comparison of Average Income in Absolute and Relative Figures for Nomads and Three Different Income Groups, Karasjok and Kautokeino Municipalities, 1959

Income Group	Karasjok		Kautokeino	
	Average Total Income		Average Total Income	
	Kroner	Relative Fig.	Kroner	Relative Fig.
Nomad	4,408	100.0	3,985	100.0
Labourer and Smallholder	4,699	106.6	4,373	109.7
White Collar Worker	14,851	336.6	13,936	349.7
Store owner, car owner and self-employed	14,375	326.1	17,679	443.6

Source: Tidsskrift for Det Norske Landbruk, No. 1-2, 1964, p. 12.

CHAPTER VI

MASI 1965

1. The Settlement

With few exceptions the settlement of Masi has not altered significantly from the distribution and number of buildings illustrated in Figure 19 for 1960. Of the fifteen nomad houses shown most were constructed in the post-war years. Some of the houses were built before the state granted loans for reconstruction so that they were built of scrap materials and were of low standard. In recent years the nomads have constructed better quality houses. These are simple structures normally consisting of a large single room (which serves as a kitchen and family room) and usually one or two adjoining rooms used as bedrooms. A storehouse (frequently more than one) is always situated near the main building. In Masi there are several stabbur belonging to nomads who live in the Masi region but do not have a house in Masi itself.

In 1960 there were 266 persons in Masi. Since 1960, however, the population of Masi has risen to approximately 320. The population of 1960 comprised 182 Settled Lapps and 84 nomads.¹

¹A. Steen, Masi: En Samebygd, Samiske Samlinger VI, Utgitt Av Norsk Folkemuseum, Universitetsforlaget, Oslo, 1963, p.112.

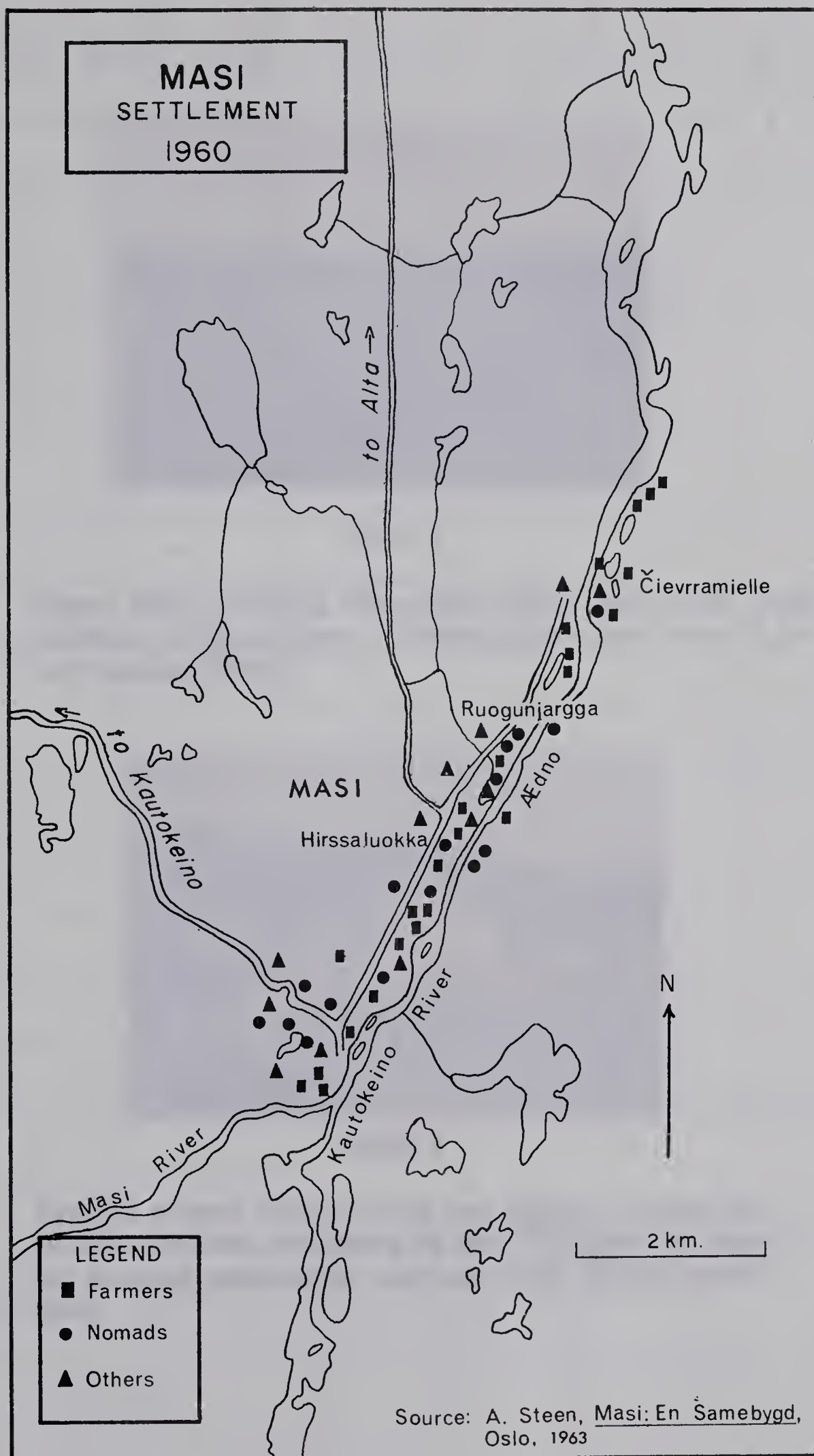


Figure 19



Plate 1

Upper Masi, showing Kautokeino River and to the right, entrance of Masi River. Photograph taken from highway looking south.



Plate 2

Typical nomad winter house and stabbur to left and behind. Frame structure to left of stabbur is used for keeping equipment, such as sleds, above ground level.

Of the 182 Settled Lapps, sixty-eight were children under fifteen years of age; the eighty-four nomads included forty-one children under fifteen years of age. In all, the population of Masi consisted of 59 per cent adults and 41 per cent children. Only six of the adults exceeded seventy years of age (four Settled Lapps and two nomads) and in the old age group of 60-70 years there were no more than fourteen individuals. The six members over seventy years of age represented 2.26 per cent of the population; extremely low in comparison to the national figure of 7.1 per cent.²

2. Roads and Transportation

As pointed out in the previous chapter the construction of a road link between Alta and Masi in 1932 influenced the life of both the Settled Lapps and the Mountain Lapps living in the latter place. Further developments in transportation links since then have resulted in Masi approximating the status of a stasjonsby, that is, a point of concentration for traffic from points beyond the Masi region. Examples of more fully developed stasjonsbyer on Finnmarksvidda are Karasjok and Kautokeino.

In the summer of 1965 Masi's road connections with points outside the region were as follows (Figure 20):

²Loc. cit.

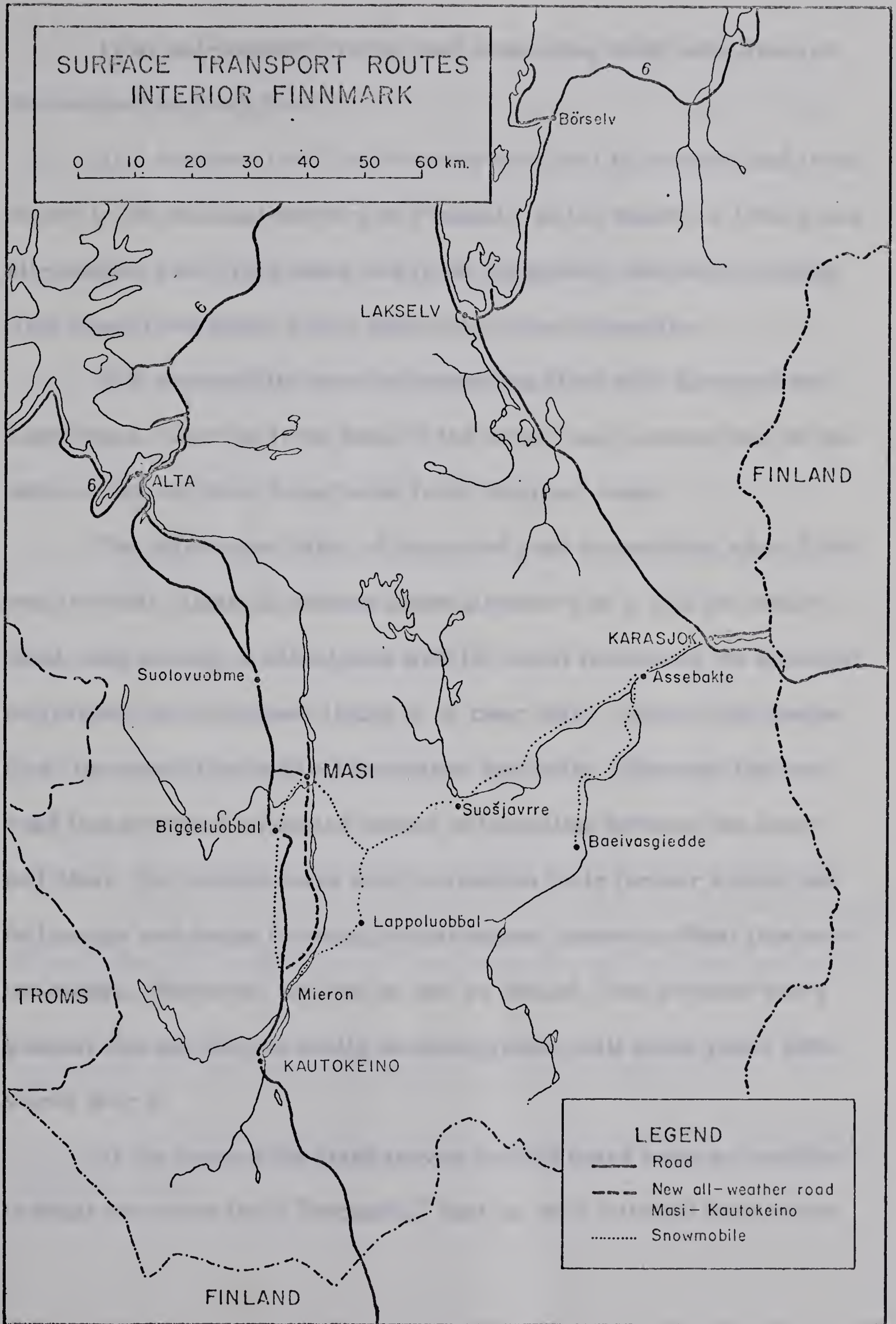


Figure 20

1) An all-weather gravel road connecting Masi with Alta and the national highway No. 6.

2) A summer road link between Masi and Kautokeino and from thence to the national network of Finland. In the winter of 1965 a new all-weather road from Masi was to be completed, thereby providing Alta-Masi-Kautokeino with a year-round road connection.

3) A snowmobile service connecting Masi with Karasjok and Kautokeino. Service from Masi to the other Lapp centres was on the basis of two or three departures from Masi per week.

The effect upon Masi of improved road connections after 1932 was twofold: first, it became more attractive as a site for settlement, and second, a direct link with the coast facilitated the seasonal migrations of the nomads living in or near Masi. After 1932, therefore, the population of Masi increased markedly. Because the new road link provided an easier means of travelling between the coast and Masi, the nomads were able to abandon their former spring and fall camps and began to establish permanent houses in Masi (the winter camp). However, as best as can be judged, this process was a gradual one and did not really become typical until some years after World War II.

At the time of the field survey in 1965 there were no families in Masi who were truly "nomadic," that is, who followed their herds

closely during migration.³ All the Masi nomads had permanent winter homes in Masi or resided with friends in the village during the winter months.

With a road connection to the coast (and Kautokeino) migrations to and from Masi were made relatively easy since equipment and families could be transported by bus, truck or car. Moreover, it became possible, within a single day, to commute between Masi and the summer base camp at Kåfjord (near Alta) used by many of the Masi nomads.⁴ Apart from facilitating migration, the presence of the road connecting Alta-Masi-Kautokeino meant that a slaughterhouse could be established at Kautokeino and the products conveniently trucked to centres of distribution.⁵

Direct road connections with the coast, therefore, strongly influenced the Masi nomads to settle in or near Masi and to build permanent homes there. The full effect of the road upon the life

³There are few if any families who do this in Finnmark, though possibly some families maintain the traditional way of life in Sweden. These, however, migrate over much shorter distances than is the case in Finnmark.

⁴From here the herds' summer range is reached by a half-day's hike into the mountains lying to the west of Kåfjord.

⁵With the all-weather road between Masi and Kautokeino there seems a likelihood that slaughter facilities may eventually be established at Masi.

of the Settled Lapps in Masi is harder to gauge, however, Certainly the road brought an end to the necessity of having to use the Kautokeino River as a means of reaching Kautokeino from Masi (overland trails were also in use of course). This meant that the Lapps in Masi were no longer able to find employment as workmen to pole visiting parties up the river. But such work was seasonal and uncertain. Formerly, postal deliveries were made on foot using overland trails but this too was discontinued once the road was completed. The influence upon agriculture in the settlement was more far-reaching, however. Before the road, milk produced locally was for home consumption. The road made it possible for local farmers to ship milk to the dairy in Alta with the result that a number of barns were constructed in Masi and more emphasis was placed upon milk production than had formerly been the case.

3. Services

Masi provides a number of services to both the village and surrounding region (Figure 21). Telephone service to Masi was completed in 1920; electricity in December 1964. At first the telephone was situated in the private fjellstue (hostel) of a man named Hermansen. Later, however, the telephone and small switchboard were transferred to a room adjoining the residence of the village storekeeper, Nils Mathis Turi. There are presently no private tele-

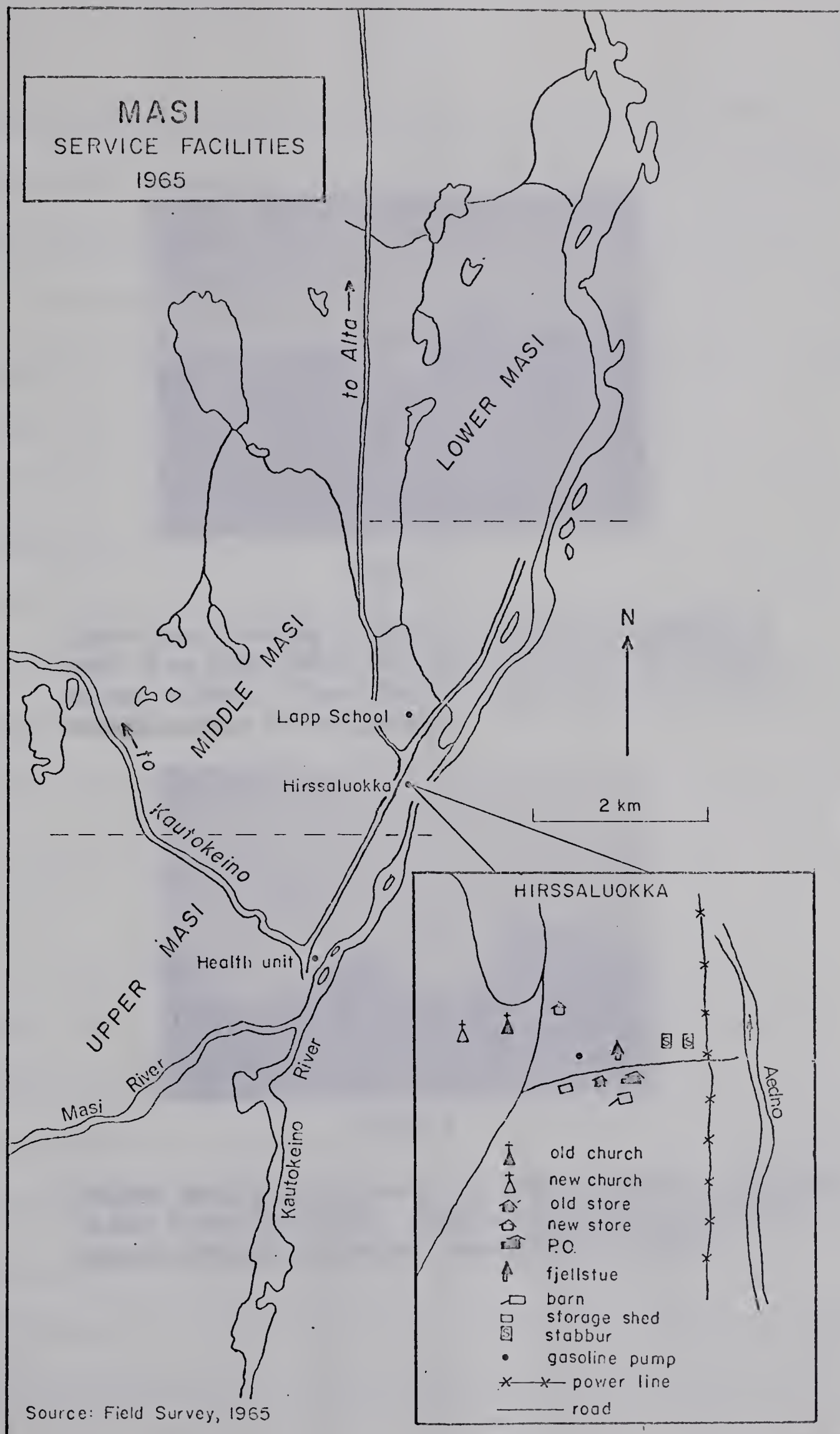


Figure 21



Plate 3

Upper Masi looking northeast, showing old stabbur to left. Far right shows farmhouse of one of the larger farms in Masi. Cone-shaped object is birch firewood. Rough pasture in foreground.



Plate 4

Middle Masi and prominent hill of Hirssaluokka. Structure to left is the new store. Centre building is temporary church with new one under construction to right.

phones in Masi, except at the Internat or Lapp boarding school.

The telephone office also serves as the village post office and contains postal boxes assigned to individual residents in the village.

Several years before the road was completed to Masi a small sykestue or health unit was established in a large two-storey building in Upper Masi. The health unit is presently staffed by a nurse, an assistant, and a housekeeper. With the possible exception of the housekeeper, the staff of the health unit are Norwegians from outside the district. At fairly regular intervals visits are paid to the Masi health unit by a doctor for consultations and the treatment of minor illnesses. For more serious medical cases patients are taken by car to the hospital at Alta or Hammerfest. Dental services are available in Kautokeino, where there is a resident dentist, and also in Alta.

In 1958 a Lapp boarding school, or Internat, was built in Middle Masi. Apart from providing schooling for Lapp children drawn from Masi and the surrounding region, the school has been responsible for bringing teachers into the village and encouraging visits by tourists. As is quite common in Norway, the school in Masi is made available during the summer months for tourist accommodation. By providing clean, comfortable lodging more tourists are being attracted to Masi, where there is the opportunity to

enjoy pleasant scenery and to fish in the local lakes and rivers. Tourists are also encouraged to take guided trips on the Kautokeino river. Increased tourist activity in Masi has stimulated efforts to capitalize upon this new source of revenue.

The school in Masi is maintained by Kautokeino municipality, whereas the large Lapp boarding school in Kautokeino is a state responsibility. All the children attending the school receive free board and tuition. During the school year 1964-1965, 110-12 pupils attended Masi school. Of this number approximately seventy were children of nomads; the remainder were from Settled Lapp families. The staff consisted of ten teachers, most of whom came from outside Masi. The school provides the first six years of compulsory education but this will soon be increased to nine years. Pupils attending school in Masi will complete the additional three years of compulsory education in Kautokeino.

The first public building in Masi was the church, built there in 1720. It was established upon the initiative of the missionary, Thomas von Weston, in order to forestall a Swedish effort to colonize the region. Since that time there has always been a church in Masi though for a long period after 1751 the church lost its importance and fell into disrepair. A new church was erected on Hirssaluokka, the prominent hill in Middle Masi, in 1930 and remained in use until burned to the

ground during the German retreat from Finnmark in 1944. A temporary structure was built to replace the destroyed church. In 1965 this building was still in use, but alongside a fine new church which would soon replace it was under construction. The members of the church are of the Lutheran denomination and services are conducted in Norwegian and Lappish at the church by a pastor from Alta.

What might be described as the centre of Masi is the cluster of buildings belonging to Nils Mathis Turi at Hirssaluokka. The Turi family is one of long-standing in Masi and Nils Mathis Turi is "probably the only one here [Masi] who appreciates the fact that the Lapps in Masi must show a little initiative if they hope to improve their living standard."⁶ Turi and his son (an orphan brought up by Turi but not adopted by him), Ole Olsen Hetta, own a small farm and the only store in Masi. In connection with the store Turi operates a gasoline pump and also sells lubricating oil and coal oil. The local fjellstue (hostel), formerly government-operated, is also owned by him, and he manages the village post office and telephone exchange. At the time of the field survey a new store was being constructed at Hirssaluokka to serve the expanding needs of the village and the increased number of tourists visiting Masi. Because of its central location and the fact that the store is visited frequently by nearly all residents of Masi for the purchase of food staples, dry goods and

⁶ T. Guttormsen, pers. comm. Masi, August 8, 1965.



Plate 5

Middle Masi and new farm looking northeast. Note new buildings including barn and stabbur with fish net rack on top. Tractor and hayfield in foreground.



Plate 6

Hirssaluokka and Kautokeino River, looking south. Centre building is home of Nils Mathis Turi, to which is attached the post office and telephone exchange. Building to right is the store. In foreground the evening bus from Alta.

household articles (as well as mail), the store serves as an information centre. Notices of local importance (doctor's visits, part-time job opportunities, contracts for firewood, requests for fresh fish, etc.) are posted at the store. Also, the two daily buses connecting Masi with Alta and Kautokeino stop at the store. Apart from passengers the buses carry mail and in some cases light freight, though most supplies for the store are brought by truck from Alta. Thus, as a result of their initiative and business acumen, Turi and his son control and operate the only commercial enterprise in Masi. They have also been able to augment their income by acquiring the duties of postmaster and telephone operator, as well as by operating the hostel and running a small farm. Turi, by local standards at least, is a relatively wealthy man. He was able, for example, to afford the luxury of running water in his home after the system was first installed in the school. Though close to the school, such an undertaking was nonetheless expensive as the pipes, because of the extreme cold in Masi, had to be buried over three yards under the surface. He also paid more in taxes in 1964 than anyone else in the municipality of Kautokeino.⁷

4. Local Economy

The two main economic occupations in Masi are reindeer

⁷T. Guttormsen, pers. comm. Masi, August 8, 1965.

breeding and farming. However, agriculture proper, that is for profit, is of secondary importance. Subsidiary income and food are acquired by fishing, hunting, the sale of handwork and seasonal employment.

Of the approximately 320 residents of Masi, about 90-100 are Mountain Lapps. Except for amounts of cash gained through the sale of, for example, ptarmigan, cloudberry and handwork, the Mountain Lapps live almost entirely from the sale of reindeer products. From an economic standpoint the Mountain Lapps are far better off than the Settled Lapps in Masi since they hold a definite capital asset in the reindeer they own. On the other hand, the Settled Lapps are very limited as to what they can sell in view of the limitations placed upon intensive agriculture by climate. The result is that the Settled Lapps in Masi must supplement their income from the sale of farm products (mainly milk), by part-time seasonal employment and by whatever other means are available to them. Most Settled Lapps in Masi own some reindeer which are herded for them by the nomads. From the sale of these animals they are able to gain further income but first must pay the nomads about Kr. 10 per animal as a herding fee.

a) Reindeer Breeding

There are at least twenty-five families in Masi and the Masi region occupied the year round with reindeer herding. Since 1954 the number of Masi reinbyer (herding groups) which winter in the Masi region has increased to eight (see Figure 17, Chapter V). As explained in Chapter V, however, there are families who belong to the Masi reinbyer but come from outside the region. For this reason it is difficult to determine the number of reindeer owned by nomads living in Masi and region. The situation is further complicated by the inclusion of reindeer belonging to the Settled Lapps in the herds of the nomads. If one assumes that all the Masi nomads have at least the minimum of 200 reindeer generally considered necessary for a marginal income from reindeer herding, there are 5,000 reindeer owned by the twenty-five nomad families in the Masi region. Unfortunately, on the basis of such an assumption, the figure is unreliable for there are other families which own considerably more. The wealthiest nomad in Masi owned between 1,500-2,000 animals in 1965 and the family with whom the writer lived intimated that they owned around 500 reindeer, though the figure was never openly discussed.⁸

As suggested, the introduction of a road link between Masi

⁸ According to an informant in Masi, thirty years ago a family with 150-200 reindeer could live quite well. Today a family must own 500 reindeer.



Plate 7

On the summer range. Herder's tent with two nomads and herd dogs from Masi. Typical Lapp summer clothing--cloth "kofte" or jacket and leather breeches and footgear. Pattern on "kofte" denotes Kautokeino Lapps. Note lasso in foreground.



Plate 8

The Vidda.

and Alta changed the conditions of reindeer herding for the nomads living in Masi. It permitted the nomads to build permanent houses in Masi, facilitated the process of migration, determined the location of corrals and made it possible for the herders to commute between Masi and the summer base camps at the coast. In other words, mechanized transport made it possible for the nomads to more closely approximate the life of the Settled Lapps and to benefit from the conveniences available in an established settlement. In 1961, according to an informant, there were only two cars in Masi; in 1965 there were fifteen. Not all of these were owned by nomads, however.

The most recent mechanical innovation to be introduced into reindeer herding is the snowscooter. The first of these was purchased by a Masi resident in 1963; by 1965 there were fifteen or twenty in the village. They are very expensive, costing between 9,000-13,000 Norwegian Crowns (\$1,280-\$1,860). Unfortunately, some herders, with far too little capitalization, have purchased snowscooters in the mistaken belief that they will improve the economy of their reindeer operation. In one instance in particular a herder, already in debt for a new house, sold thirty of his best reindeer stock in order to buy a snowscooter. But it only served to place him more heavily in debt with the result that unless the municipality came to

his aid he stood to lose his entire investment.⁹

For those nomads who have sufficient reindeer to warrant the expense of a snowscooter, it is of considerable benefit in the task of herding. Its adoption has of course meant a reduction in the number of reindeer needed for driving purposes. In many cases the increased speed and towing capabilities of the snowscooter have enabled herders to operate from the village or a permanent base camp while maintaining daily contact with their herds. On the other hand, as one informant explained, the Lapps do not generally understand machinery and consequently the snowscooters sometimes become liabilities through lack of maintenance and improper handling.¹⁰ Moreover, they lie idle part of the year and must be serviced and operated at a cost.

Reindeer herding will continue to be a primary occupation for a large segment of the Lappish population in Masi and region. But for the young men of nomad families who, like their fathers, wish to be reindeer owners, there are many problems. Not the least of the problems is the increase in size of the nomad families beyond the capacity of the herds to supply all the sons with a living from reindeer herding.

⁹T. Guttormsen, pers. comm. Masi, August 8, 1965.

¹⁰To overcome this difficulty one dealer had started a short course in snowscooter maintenance and operation.

b) Agriculture and Livestock

Despite the limitations imposed by climate, farming in Masi during the last thirty to forty years has made progress. Government grants for breaking new land, improved communications, professional advice and the adoption of more modern farming practices all have aided in increasing productivity. It has been during the post-war years, however, that the greatest gains have been made.

Agriculture in Masi centres around the production of meat and milk. Both oats and barley are sown and cut green for fodder. Formerly, substantial amounts of hay were gathered from bogs but this practice now has generally disappeared, instead, all farms have hay meadows and haymaking in August is part of the summer work schedule. Few, if any, families still gather reindeer lichen for animal feed. Presumably, if there was a poor hay crop, lichen would have to be collected since cattle in Masi, as elsewhere on Finnmarksvidda, must be fed indoors two to three months longer than in the rest of the country. Because of night frosts early in autumn, few people grow potatoes but some grow carrots and turnips.

According to the records of the Finnmark Department of Agriculture (Finnmark Landbruksselskap), there were forty-two persons, in 1965, registered as holders of agricultural land or livestock in Masi. The only year for which a record of the number of acres under

full cultivation is complete for all but one of the forty-two landholders is 1959. Masi, at that time, had 1,004.5 decars or 248.2 acres under cultivation. The five largest farms under cultivation were 20.5, 17.4, 16.7, 13.9, and 12.7 acres respectively. The smallest single cultivated holding was 3.7 acres.

Table XXII--Farms in Masi Tabulated According to
Amount of Land Under Cultivation, 1959

Decars ¹	Under	2.1-5	5.0-10	10.1-20	20.1-35	35.1-50	50.1-75	75.1-100
	2							
Number of Farms	1	7	5	8	9	6	4	1

Source: Records of the Finnmark Landbruksselskap, Vadsø, December 16, 1965.

¹One decar equals 0.2741 acres.

The number of livestock in Masi, according to the most recent statistics, is tabulated in Table XXIII.

Table XXIII--Livestock in Masi, 1965

Cows	Calves	Sheep	Goats	Horses
49	36	35	10	8

Source: Records of the Finnmark Landbruksselskap, Vadsø, December 16, 1965.

Emphasis is placed upon milk production in Masi. Herds are small, however, and not all farms particularly concentrate upon milk production for profit. The Norwegian government, anxious to encourage

local agriculture, has stationed a state bull in Masi for the purpose of improving the standard of cattle in the district. The Drift Kreditkasse, a special government credit department, makes loans available for agricultural improvement. Such loans enable farmers to purchase new livestock and equipment, such as tractors, at very reasonable rates of interest.

Figures for the assessed income of twenty of the forty-two registered landholders in Masi were obtained. The highest assessed income in 1964 was Kr. 17,300 or approximately \$2,450; the lowest was Kr. 2000 or \$285. The average assessed income for the twenty landholders was Kr. 8445 or \$1,200. However, when four incomes considerably in excess of the others were excluded from calculations, the average income figure dropped to Kr. 6425 or \$910.

c) Other Sources of Income

In former days some of the men from Masi went fishing aboard Norwegian vessels operating out of Finnmark ports during the winter and spring months. Nowadays this is not done. However, some men leave the village for seasonal work on roads, power lines, and building projects.

The hunting and snaring of ptarmigan in the fall and winter is common. A good bag for a season is 300-400 birds, but only a few hunters manage to kill this many. The birds are sold for around Kr. 9

per bird and thus, in a good season, some Masi residents profit substantially from hunting.

Fishing is not widespread as a commercial venture. Most fishing takes place in summer and is for the provision of family food requirements. Both rod and net are used in local lakes and rivers to catch perch, grayling, red char, pike and fresh water herring. In nearly all cases boats are used equipped with outboard motors. A few families which own a tractor may leave the village on fishing expeditions which take them far out onto Finnmarksvidda. Trout and white fish are salted and stored in barrels for consumption over the winter months. A limited market for the sale of locally caught fish is provided by the school in Masi. There appears to be little opportunity to sell fish commercially, however.

The cloudberry (Rubus Chamoemorus), found growing on damp terrain, is picked and sold for cash. The berries are picked toward the end of July and in August. Like fishing and ptarmigan hunting, however, cloudberry picking offers a variable income being very dependent upon summer weather conditions. A wet summer, such as 1965, virtually eliminated the cloudberrries as a source of cash for that year. In a good year the sale of cloudberrries can be very profitable indeed. For example, in 1964, a family in Masi collected Kr. 10,000 (\$1,428) from the sale of cloudberrries. The price per kilo was between Kr. 9-10 but this varies from year to year.

Local residents make much of their own Lapp clothing and footgear and there are many persons in Masi skilled in the manufacture of Lapp handwork. With the increased number of tourists visiting the village, the sale of authentic Lapp handwork has been stimulated. At present a local organization, the Masi Velforening (the Masi Betterment Association), is attempting to encourage the production of articles for sale to tourists. Some local residents sell their handwork directly to Husfliden (a government outlet for certified Norwegian handicrafts) in Alta. But it is hoped that eventually a branch of Husfliden may be established in Masi.

Though the cash income of many families in Masi is marginal or insufficient for their support, expenditures for such items as food, clothing and fuel are materially reduced through utilization of the natural resources close at hand. Moreover, Lapp families are the recipients of the same social welfare benefits as other Norwegians and those Lapps in economic need are eligible for assistance from the municipality. On the other hand, the Lapps seemingly desire fewer possessions than their counterparts in Norwegian society which, combined with their ability to live simply, enables them to manage on a lower income than normally might be thought sufficient. One also should not underestimate the close bonds between the nomads and Settled Lapps which contribute to mutual assistance and cooperation between the residents of Masi.

CHAPTER VII

SUMMARY AND CONCLUSIONS

There has been no official census of the Norwegian Lapp population since 1930. At that time the Lapp population of Norway was estimated to be between 20,000 and 22,000 of which 7-8 per cent were Mountain or Reindeer Lapps and the remainder either Coast Lapps (the greatest proportion) or Settled Lapps.

The majority of the Norwegian Lapps inhabit the three provinces of North Norway: Nordland, Troms and Finnmark. Small numbers are also found living in the more southerly provinces of Nord and Sør-Trondelag. The largest number of Norwegian Lapps, however, live in the province of Finnmark where, on the thinly populated plateau region of interior Finnmark, they comprise perhaps three-quarters or more of the inhabitants.

A significant feature of the interior region of Finnmark is the Finnmark plateau or Finnmarksvidda as it is called in Norwegian. The abundance of lichens on Finnmarksvidda, the principal winter food of the reindeer, accounts for the large herds of reindeer which have for centuries occupied the plateau, and the presence there of the reindeer herding Lapps--or Mountain Lapps.

Reindeer nomadism in Fennoscandia is of relatively recent origin: it seems reasonably certain that the Lapps did not become fully dependent upon semi-domesticated reindeer until about the mid-eighteenth century. During the one hundred years between 1750-1850 "reindeer breeding may probably be said to have reached its most extreme total nomadic development. . . ."¹ In Finnmark large reindeer herds wintered on Finnmarksvidda and in spring migrated to summer range in the mountainous districts of coastal Finnmark and on the offshore islands.

By the latter half of the nineteenth century reindeer nomadism in Finnmark became oriented to the cash economy of the Norwegians, as a result of a demand for reindeer meat and hides. The traditional methods of herd management were unsuited to a commercially oriented reindeer operation, since the emphasis now was upon the sale of reindeer meat and hides. Thus, in order to capitalize upon the new market for reindeer products the Lapps enlarged their herds but by so doing were forced to give up intensive herding for the more practicable extensive herding. This in turn meant that grazing areas had to be much more fully and efficiently exploited,

¹I. Ruong, "Types of Settlement and Types of Husbandry Among the Lapps in Northern Sweden," Arctica, *Studia Ethnographica Usaliensia* XI, Uppsala, 1956, p.108.

i. e., the "carrying capacity" of the pastures increased.

Although reindeer management in Finnmark underwent considerable change during the nineteenth century, the Lapps continued to live a nomadic life. Even as late as 1915, according to Nissen, this was still the case. However, it was apparent to Nissen that the Lapps were beginning to build permanent houses and the degree of permanency of settlement in the nomadic reindeer economy was increasing.

World War II and the German occupation of Finnmark had a profound and lasting effect upon the Lapp inhabitants of interior Finnmark. Formerly isolated settlements were exposed to modern influences which made it necessary for the Lapps, as Vorren remarked, "to make up their minds about the fundamental problems of the machine age."² One of the problems facing the Lapps was to keep their reindeer herding economy economically viable in the face of an increasing dependence upon purchased goods. Another was to absorb the surplus population of the nomad group even though the pastures limited the extent to which they could enlarge their herds.

The studies of reindeer nomadism undertaken by Vorren in the postwar years showed that the trend toward permanency of settlement

² Ø. Vorren and E. Manker, Lapp Life and Customs, Oslo University Press, 1962, p. 154.

discernible in 1915 had progressively advanced as the road network became more extensive in Finnmark. Accessibility to a road was a factor in determining a Lapp's choice of building site. However, since the winter half-year was the period when there was the most work with herds, the house was generally located near his herd's winter range: the location of the Lapp settlements in Finnmark coincide with the winter feeding grounds and therefore most of the nomads chose to build their permanent quarters near such communities as Karasjok, Kautokeino or Masi. Nomads whose winter range was too far from a settlement to make it practical to live there, placed their house so as to be close to both their winter range and migration route. In all cases, Vorren noted that permanency of settlement had resulted in a weakening of the close herd-family relationship that had traditionally been one of the characteristics of reindeer nomadism. Proper herd management practices had in some cases suffered as a consequence: there was a tendency to allow herds to run unattended for long intervals and too great a reliance was placed upon fences to control the movements of the herds.

It is a general characteristic of Lapp settlements in Finnmark that the church has been a nucleus near which the Lapps have built their houses. This condition is particularly characteristic of Polmak and Karasjok Reindeer Circuits where the majority of Lapp dwellings

are near the local church in Polmak and Karasjok. However, isolated settlements occur along both the Karasjok and Tana River valleys away from these two centres. In Kautokeino Reindeer Circuit, however, concentration of settlement near the church at Kautokeino is less marked and one finds clusters of dwellings to the south of Kautokeino and at Masi and Alta to the north where the Kautokeino River and main highway converge.

Though the church marked a sort of focal point for local Lapp settlement, communities grew piecemeal and inevitably acquired an irregular internal structure. Postwar reconstruction and road building in Lappish settlements changed this to some extent, however, and Lapp communities tend to conform to the local road system. This is particularly evident in Karasjok and Kautokeino today.

Aside from the detrimental effects permanent nomad settlement has frequently had upon proper herd management practices, it has allowed the nomads to enjoy some of the amenities and benefits of a community and to more closely approximate the living standard of their counterparts elsewhere in Norwegian society. In communities such as Masi very real efforts are being made by enlightened individuals to make the Lapps aware of means by which they may improve their living standard and to aid them in doing so. A very simple example in Masi is the efforts by the local school principal to improve

local hygiene by providing the local residents with the opportunity to use the school's laundering and washing facilities. A local group is also attempting to encourage the manufacture of Lapp handwork for sale to the increasing number of tourists who pass through Masi during the summer months.

A more settled life, not unnaturally, has increased the nomad's need or desire for purchased goods, and the ease with which these can be obtained has meant that many articles formerly manufactured by the Lapps themselves are now bought in local stores. The need for cash, therefore, becomes more pressing and when purchases include items such as cars and snowscooters the demands placed upon the cash income available from the herd become greater and greater. It is important to remember, though, that technical innovations like the snowscooter, while they may save time, are of no particular advantage if the time saved is not in some way used to improve the productivity of the herd, or to augment the income by some other means. Unfortunately often the Lapps have looked upon the acquisition of some technical innovation as a solution to their financial problems; but the very opposite has been the result, and even greater debts have accrued.

The salient characteristics of the development of reindeer nomadism, and the later transition to transhumance on Finnmarksvidda,

are evidenced in the evolution of the settlement and economy of the Masi region.

Masi became a centre for the nomads inhabiting the region between Alta and Masi after a church was built in Masi in 1720. The church, as elsewhere on Finnmarksvidda, formed the nucleus of subsequent settlement. The first settler in Masi was a Swede who came there in 1670. However, it was not until the immigration of Kvaen families in 1874 that a viable settlement was established.

It is not possible to state with any certainty the effect the Russian border closures of 1852 and 1889 had upon nomads living in the Masi region. Though it is known that sixty-nine Lapp families and their herds left Kautokeino for Karesuando (Sweden) and Enontekiö (Finland) after the closure of the Norwegian-Finnish border in 1852, there is no mention of families from Masi following suit. The closures, however, considerably reduced the areas of winter range available to the Finnmark Lapps and the agreements reached later between Sweden and Norway pertaining to grazing privileges within each other's borders may have forced relocation of Masi herds.

In the light of Nissen's report of 1915, most of the Masi nomads lived in tents and followed their herds uninterruptedly over the winter months. In spring the families accompanied their herds on the long migrations to the coast and returned with them to the interior in the

fall. By 1932, however, the road which was then being constructed from Alta to Kautokeino reached Masi. The road provided a direct route between Masi and the coast and thus connected the regions of winter and summer range. Though the road had little influence upon the actual movement of herds, since they continued to use the old migration routes, road transport facilitated the conveyance of families and equipment to and from the coast. After 1932, many Masi nomads settled permanently in the village or the surrounding district in order to take advantage of the short road distance between Masi and Alta (45 miles). Eventually families ceased migrating with the herds entirely and either travelled directly by road to their summer camps or remained in the winter house the year round. It also became feasible for the herders to return to the winter settlement from time to time during the summer grazing period.

In the postwar years the operation of reindeer herding has been considerably refined. There are no longer any nomad families in Finnmark who live permanently in tents. Tents are used by the herders and their dogs as temporary shelters but their families seldom accompany them unless the summer camp is close to the herd's feeding grounds. In Masi many nomad families remain throughout the year in the village, and only the herders leave for the coast. Quite frequently the herders will return to the village after their period of

herd patrol or fence repair is completed. Some families move to summer base camps at the coast and remain there until it is time to drive the herds inland; others, with children, do not do so until the beginning of the summer vacation. A base camp used by some of the Masi nomads is situated at the head of Kåfjörd, just south of Alta. Here they live in large comfortable tents or small shacks.

Masi itself has retained the character of a Lapp settlement up to the present time. The population is, with a few exceptions, entirely Lappish, composed of Settled Lapps who depend upon farming, hunting, fishing and other means for their livelihood, and Mountain Lapps who own herds of reindeer.

The nomadic life of the Lapps has progressed gradually from the old semi-nomadic hunting and fishing culture to the present day Mountain Lapp culture. But while other occupations have advanced to keep pace with modern developments, reindeer breeding has fallen behind.

Research can do much to aid in improving the efficiency and quality of many aspects of reindeer management. There is need for research into such vitally important factors as lichen conservation, reindeer nutrition and disease, pest control, slaughtering methods and hygiene, and the economy of reindeer operations. Each of these problems interacts with the others; improvement in one area helps to

raise the standard of reindeer husbandry generally.

The reindeer owners represent a small proportion of the total population of Norway. But while their number is small, the contribution they make to the national revenue is significant and could be increased. Moreover, reindeer herding is the main source of income for the Mountain Lapps and the product they supply is a valuable source of protein in a country where beef and other animal protein is in short supply and often prohibitively expensive. Reindeer herding is therefore not an anachronism with little relevancy to the Norwegian economy.

The Mountain Lapps are individualists who have traditionally led an isolated life in a remote part of the country. Their contacts with authority have been minimal and, because they do not represent a vociferous group, they have attracted little attention other than as subjects for romantic notions of nomadic life. The Lapps themselves, until recently at least, have given little thought to how they might raise their standard of living and receive a fairer return for the hard, strenuous life they lead. Though the Lapps have an organization which is concerned with their welfare, many are not aware of the benefits such a group has for them. As the Lapps do not constitute an organized pressure group their complaints and demands are often obscured by those of more organized groups, such as fishermen and industrial workers. Fortunately, however, the problems of the nomads have

not gone unnoticed. There is an increasing effort in Norway to improve their condition and to help them adjust their way of life to modern circumstances.

BIBLIOGRAPHY

- Ahlmann, H. W. Norge, Nature og Naeringsliv, Universitetsforlaget, Oslo, 1943, 279 pp.
- Ahti, T. Taxonomic Studies on Reindeer Lichens. Ann. Bot. Soc. "Vanamo," Vol. 32, No. 1, Helsinki, 1961, 160 pp.
- Allison, A. C. "The Lapps: Affinities," Geogr. Journ., Vol. 119, Part 3, Sept. 1953, pp. 315-320.
- Anderson, R. T. "Dating Reindeer Pastoralism in Lapland," Ethnohistory, Vol. 5, No. 4, 1958, pp. 361-385.
- _____. "Acculturation and Indigenous Economy as Factors in Lapp Cultural Change," Anthropological Papers of the University of Alaska, Vol. 7, No. 1, 1958, pp. 1-22.
- Bartholsen, A. "Reindriftnaering i Finnmark," Tidsskrift for Det Norske Landbruk, Nos. 7-8, July-August 1960, pp. 305-308.
- Bates, M. "Human Ecology," in A. L. Kroeber (ed.), Anthropology Today, University of Chicago Press, Chicago, 1953, pp. 700-711.
- Beckman, L. "The Significance of the A₁-A₂ Blood Groups in European Anthropogeography," Geografiska Annaler, Vol. XLI, 1959, pp. 83-93.
- Bernard, C. "Problems de Communications en Norvège du Nord," Revue de Géographie de Lyon, No. 3, pp. 317-333.
- Biays, P. "Les Lapons et Leurs Genres de Vie Spécialement en Norvège," Revue Canadienne de Géographie, Vol. 4, 1950, pp. 81-93.
- Birket-Smith, K. Primitive Man and His Ways, Odhams Press Ltd., London, 1957, 239 pp.
- Bruemmer, F. "The Lapps," Cdn. Geogr. Journ. Vol. LXVII, No. 3, Sept. 1963, pp. 104-109.

Collinder, B. The Lapps, Princeton University Press, New York, 1949, 252 pp.

Courtright, A. M. Range Management and the Genus Rangifer, Unpub. M.Sc. Thesis, Department of Zoology, University of Alaska, 1959, 172 pp.

Davies, E. "Patterns of Transhumance in Europe," Geography, 1941, pp.155-68

Eidheim, H. and Schjøtt, T. B. Polmak and Manndalen To Samebygder, Vol. IV, Norsk Folkemuseum, Oslo, 1958, 100 pp.

Elbo, J. G. "Lapp Reindeer Movements Across the Frontiers of North Scandinavia," Polar Record, Vol. 6, No. 43, 1952, pp. 348-58.

Elton, C. "Notes on a Traverse of Norwegian Lappland by the Oxford University Expedition," Geogr. Journ., Vol. 79, Jan. 1932, pp. 44-48.

Evans, E. E. "Transhumance in Europe," Geography, Vol. XXV, No. 4, 1940, pp. 172-180.

Falkenberg, J. Bosetningen ved Indre Laksefjord i Finnmark, Bidrag til Finnernes Bygdhistorie og Etnografi, Nordnorsk Samlinger, Utgitt av Etnografisk Museum II, Oslo, 1941, 134 pp.

Ficatier, M. E. and Vassal, P. "Les Lapons du Finnmark," Essai de Géographie Humaine et de Psychologie des Peuples, Le Havre, 1949, pp. 161-182.

Findeisen, H. "Wandlungen Der Lappischen Rentierwirtschaft," Geographische Rundschau, Vol. X, No. 4, 1954-1858, pp. 129-136.

Forde, D. Habitat, Economy and Society, Methuen and Co. Ltd., London, 1956, 500 pp.

Furumark, A. et al. Laponica, Studia Ethnographica Upsaliensa XXI, 1964, 357 pp.

- Gjessing, G. "Changing Lapps," Monographs on Social Anthropology 13, London School of Economics and Political Science, London, 1954, 67 pp.
- _____. "Culture Contact in a Lapp (Same) Community: Karasjok in Eastern Finnmark, Norway, Man LIII, No. 174, London, pp. 116-117.
- _____. "A Note on Changing Norwegian Attitudes Towards the Lapps," Man LIII, No. 99, London, pp. 69-71.
- _____. "Norwegian Contributions to Lapp Ethnography," Journal of the Royal Anthropological Institute, Vol. 77, 1947, pp. 47-60.
- Hatt, G. Notes on Reindeer Nomadism, Mem. of the American Anthropological Assoc., Vol. VI, No. 2, April-June 1919, 133 pp.
- Hellesnes, B. R. Finnmark i Flammer, Vol. II, Kragerø, 1950, pp. 13-254.
- Henrikson, H. "Sameliv og Samfunnet," in A. Nesheim (ed.), Sameliv, 1951-1952, Oslo, 1952, pp. 94-104.
- Herskovits, M. J. "Memorandum for the Study of Acculturation," American Anthropologist, Vol. XXXVIII, 1936, pp. 149-152.
- _____. "Some Comments on the Study of Culture Contact," American Anthropologist, Vol. XLIII, 1941, pp. 1-10.
- Hill, R. G. (ed.). The Lapps To-Day in Finland, Norway and Sweden, Conferences of Jokkmokk 1953, Karasjok 1956, Publication du Centre d'Études Arctiques et Antarctiques, Paris 1960, 227 pp.
- Hustich, I. The Lichen Woodlands in Labrador and Their Importance as Winter Pastures for Domesticated Reindeer, Acta Geographica 12, No. 1, 1951, 45 pp.
- _____. "On the Recent Expansion of the Scotch Pine in Northern Europe," Fennia 82, No. 3, 1958, pp. 3-25.
- Høst, P. The Lapplanders, Dreyer, Oslo, 1964, 112 pp.

- Kirk og Undervisningsdepartementet, Instilling fra Komiteen til å Utrede Samespørsmål, August, 1956, Mysen, 1959, 89 pp.
- Kolsrud, K. Sommersete, Til Problemet om Halvnomadisme og Seterflytting Blant Norske Sjøsamer, Universitetsforlaget, Oslo-Bergen, 1961, 72 pp.
- Llano, G. A. "Utilization of Lichens in the Arctic and Subarctic," Economic Botany, Vol. 10, No. 1, January-March, 1944, pp. 1-65.
- Lowie, R. H. A. "Note on Lapp Culture History," Southwestern Journal of Anthropology, Vol. 1, No. 4, Winter 1945, pp. 447-454.
- Luihn, H. Finnmark: En Økonomisk Analyse, Utgitt av Arbeidsdirektoratet, Oslo, 1952, 64 pp.
- Lund, D. H. "Revival of Northern Norway," Geogr. Journ., Vol. 108-109, Nos. 1-3, 1946-1947, pp. 185-197.
- Lundman, B. "On the Origin of the Lapps," Ethnos, Stockholm, 1946, pp. 71-88.
- Lloyd, T. The Reconstruction of North Norway 1945-1955, Technical Report, Office of Naval Research 438-03-04, 1956.
- _____. Reconstruction of Transportation in North Norway, Technical Report, Office of Naval Research 438-03-06, 1956.
- Lyftingsmo, E. "Oversyn Over Fjellbeite i Finnmark," Norske Fjellbeite, Vol. XV, 1965, 367 pp.
- Manker, E. The Nomadism of the Swedish Mountain Lapps, Acta Lapponica VII, Stockholm, 1953, 261 pp.
- _____. People of Eight Seasons. The Story of the Lapps, The Viking Press, New York, 1964, 214 pp.
- _____. "Swedish Contributions to Lapp Ethnography," Journal of the Royal Anthropological Institute, Vol. LXXXII, 1952, pp. 39-54.

- Mead, W. R. "Finnmark, an Historico-geographical Study," Cdn. Geogr. Journ., Vol. 24, May 1942, pp. 240-47.
- _____. An Economic Geography of the Scandinavian States and Finland, University of London Press Ltd., London, 1958, 302 pp.
- Mirov, N. T. "Notes on the Domestication of Reindeer," American Anthropologist, Vol. 47, No. 1, 1945, pp. 393-408.
- Movinkel, H. Problemer i Reindriften--Spesielt i Finnmark, Tidsskrift for Det Norske Landbruk, 1964, 29 pp.
- Myklebost, H. Norges Tettbygde Steder (1875-1950), Universitetsforlaget, Oslo-Bergen, 371 pp.
- Myres, J. L. "Nomadism," Journal of the Royal Anthropological Institute, Vol. 71, 1941, pp. 19-41.
- Nickul, K. "Report on Lapp Affairs," Fennia 76, No. 3, 1952-1953, pp. 1-60.
- Nissen, K. "Lapper og Ren i Norge," Det Norske Geografiske Selskabs Aarbok, Vol. XXVI-XXVII, 1914-1916, Oslo, pp. 58-110.
- Norge, Geografiske Leksikon, Finnmark, Vol. III, J. W. Cappelens Forlag A/S, Oslo, 1963, pp. 1246-1336.
- Norske Meterologiske Institutt, Nedbøriakttagelser i Norge (Precipitation Measurements in Norway), Oslo, 1960.
- Norway, Central Bureau of Statistics, Statistisk Aarbok, Oslo, 1965, 377 pp.
- Nuttonsen, M. Y. Ecological Crop Geography of Norway and its Agro-climatic Analogues in North America, American Institute of Crop Ecology, Study No. 12, 1950, 27 pp.
- O'Dell, A. C. The Scandinavian World, Longmans, Green and Co. Ltd., London, 1957, 549 pp.
- Paine, R. "Changes in the Ecological and Economic Bases in a Coast Lappish District," Southwestern Journal of Anthropology, Vol. 14, 1958, pp. 168-188.

- Paine, R. Coast Lapp Society I, Tromsø Museums Skrifter, Vol. IV, Tromsø Museum, Tromsø, 1957, 341 pp.
- Paterson, S. S. "Anthropogeographical Studies Among the Jokkmokk Mountain Lapps," Göteborgs Kungl. Vetenskaps- och Vitterhets-Samhälles Handlingar, Sjätte Följden. Serie A., Vol. 6, No. 2, 1956, 64 pp.
- Pehrson, R. N. "Culture Contact without Conflict in Lapland," Man, Vol. L, No. 256, London, 1950, pp. 157-160.
- Porsild, A. E. "Land Use in the Arctic," Cdn. Geogr. Journ. Vol. 48, No. 6, June 1954, pp. 232-243 and Vol. 49, No. 1, July 1954, pp. 20-31.
- Ruong, I. "Types of Settlement and Types of Husbandry among the Lapps in Northern Sweden," Arctica, Studia Ethnographica Upsaliensia XI, Uppsala, 1956, pp. 105-132.
- Scotter, G. W. "Reindeer Ranching in Fennoscandia," Reprinted from the Journal of Range Management, Vol. 18 (6) 1965, pp. 301-305.
- Seebas, F. "Die Lappen: Ihr Umwelt und Ihr Heutigen Lebensbedingungen Als Renzüchter," Geographische Rundschau, Vol. 12, 1963, pp. 481-495.
- Shimkin, D. B. "Current Developments in Lappish Research," American Anthropologist, Vol. 58, No. 1, 1956, pp. 1136-1141.
- Skjenneberg, S. Rein og Reindrif, A. S. Fjell-Nytt, Lesjaskog, 1965, 310 pp.
- _____. "Reindrif og Forskning," Tidsskrift for Det Norske Landbruk, No. 1, Jan. 1958, pp. 3-10.
- _____. "Reindriftnæringen og Lappefogdene," Tidsskrift for Det Norske Landbruk, No. 11, Nov. 1959, pp. 303-304.
- Smith, P. L. Kautokeino og Kautokeino-Lappene, Instituttet for Sammenlignende Kulturforskning Serie B, Skrifter XXXIV, Oslo, 1938, 602 pp.

- Stagg, F. N. North Norway: A History, George Allen and Unwin Ltd., 232 pp.
- Steen, A. Kautokeinostudier, Samiske Samlinger, Vol. III, Utgitt av Norsk Folkemuseum, Oslo, 1956, 112 pp.
- _____. Masi En Samebygd, Samiske Samlinger, Vol. VI, Utgitt av Norsk Folkemuseum, Universitetsforlaget, Oslo, 1963, 134 pp.
- Strøm, K. M. "The Geomorphology of Norway," Geogr. Journ., Vol. 112, 1948, pp. 19-27.
- _____. "The Norwegian Coast," Norsk Geografisk Tidsskrift, Vol. XVII, Nos. 1-4, 1959-1960, pp. 133-137.
- Sømme, A. A Geography of Norden, Cappelen's Forlag, Oslo, 1960, 363 pp.
- Teal, J. J. "The Rebirth of Northern Norway," Foreign Affairs, Vol. 32, Oct. 1953, pp. 123-134.
- Turi, J. Turi's Book of Lappland, Jonathan Cape Ltd., London and Toronto, 1931, 289 pp.
- Virtanen, E. A. "Hunting on Another Man's Ground," Transactions of the Westermarch Soc., Vol. 1, Copenhagen, 1947, pp. 95-112.
- Vorren, Ø. and Manker, E. Lapp Life and Customs, Oslo University Press, 1962, 183 pp.
- Vorren, Ø. Finnmark Samenes Nomadisme, Vols I and II (Maps), Universitetsforlaget, Oslo, 1962, 237 pp.
- _____. "Reindriften i Norge," Norsk Geografisk Tidsskrift, Vol. XI, Nos. 5-6, 1947, pp. 198-220.
- _____. Norway North of 65, Tromsø Museums Skrifter, Vol. VIII, Oslo University Press, 1960, 271 pp.
- Vreim, H. "The Ancient Settlements in Finnmark," Folkliv, 1937, Stockholm, pp. 169-204.

- Vuorela, T. "The Lapps," The Finno-Ugric Peoples, Indiana University Publications, Vol. 39 of Uralic and Altaic Series, Indiana University, Bloomington, 1964, pp. 47-91.
- Whitaker, I. Social Relations in a Nomadic Lappish Community, Samiske Samlinger, Vol. II, Utgitt av Norsk Folkemuseum, Oslo, 1955, 178 pp.
- Wiklund, K. B. "The Lapps in Sweden," Geogr. Rev., Vol. 13, No. 2, 1923, pp. 223-243.
- Zimmerman, M. "États Scandinaves," Géographie Universelle, Vol. III, Librairie Armand Colin, Paris, 1933, 328 pp.

APPENDIX A

The Important Reindeer Lichens (Cladonia Subgenus Cladina)

The three most important so-called "reindeer mosses" are the species, Cladonia alpestris, Cl. rangiferina and Cl. sylvatica. On the low and fairly moist tundra and in the lower foothills the predominant species are often the latter two. Cladonia alpestris, on the other hand, favours higher ground with suitable exposures and shelter. These are by no means all the lichens consumed by reindeer, however. When fully developed these lichens are three to four inches long but under optimum conditions can reach lengths of eight inches or even more. Growth is terminal and apical and the lower part of the plant eventually dies and begins to decay. When wet the lichens are characteristically greenish-gray but this becomes less noticeable when dry. Under such a condition the lichens are extremely brittle and will crumble to a powder in the hand. In appearance the lichens are most aptly described as coral-like, being richly branched with no obvious separation between stem and branches.

Climatic Requirements and Distribution

The numerous species of Cladinae occur most abundantly in the boreal (and Austral) regions, that is, the circumpolar coniferous

belt of the Northern Hemisphere and the analagous regions in the Southern Hemisphere. Similarly, lichens are found in greatest abundance in continental cold climates, though they are probably present in most arctic to mid-latitude regions with an oceanic climate. In nearly all cases most of the Cladinae are confined to limited phytogeographical regions each of which exhibit specific climatic characteristics. Unfortunately, as yet the mapping of the total range of lichen species is deficient.

Habitat

The growth rate of lichens is extremely slow. For growth they require moisture and heat, and light is generally one of the most significant limiting factors because there are only a few lichens able to survive in shaded habitats. The main source of water for all Cladinae is the atmosphere but required amounts vary with the different species. Curiously, abundant moisture supply is detrimental since the lichens then are forced to recede in the face of competition from mosses and vascular plants. They are able, under certain micro-climatic conditions, to remain active under low temperatures, particularly if covered by a thin snow layer, with the result that their vegetative period may be extended into early spring and late fall. Generally speaking, lichens grow in a wide range of habitats under widely varying climatic conditions. The Boreal and Arctic species are all

capable of enduring prolonged dessication and extreme ranges in temperature. The nature of the soil is of great importance to lichen growth. In view of their inability to compete with vascular plants on damp soils, lichens thrive best on sandy, gravelly, stony, or rocky soils; that is, soils offering generally dry conditions. Ahti states: "the presence of such habitats has an essential influence on their abundance in any district."¹

¹T. Ahti, Taxonomic Studies on Reindeer Lichens (Cladonia, Subgenus Cladina), Ann. Bot. Soc. "Vanamo," Helsinki, 1961, p. 142.

APPENDIX B

The Lappish-speaking Population of the Four Municipalities with a Lappish Majority, 1891-1950.

Kautokeino Municipality

Year	Number of Lappish-speaking	Per cent of Total Population
1891	845	96.0
1900	790	97.7
1910	940	95.0
1920	900	95.0
1930	1050	92.0
1940	1212	90.0
1950	1362	88.0

Source: Compiled from Kirke og Undervisningsdepartementet, Innstilling fra Komiteen til å Utrede Samespørsmål, 1959.

Karasjok Municipality

Year	Number of Lappish-speaking	Per cent of Total Population
1891	530	94.0
1900	600	95.5
1910	800	95.5
1920	918	94.8
1930	1030	94.0
1940	1225	88.8
1950	1415	83.5

Source: Compiled from Kirke og Undervisningsdepartementet, Innstilling fra Komiteen til å Utrede Samespørsmål, 1959.

Polmak Municipality

Year	Number of Lappish-speaking	Per cent of Total Population
1891*	1230	85.0
1900*	1260	83.0
1910	450	95.0
1920	520	93.0
1930	600	95.0
1940	700	91.0
1950	840	86.0

Source: Compiled from Kirke og Undervisningsdepartementet, Innstilling fra Komiteen til å Utrede Samespørsmål, 1959.

*Polmak and Nesseby.

Nesseby Municipality

Year	Number of Lappish-speaking	Per cent of Total Population
1891	1230	85.0
1900	1260	83.0
1910	850	77.0
1920	860	73.0
1930	980	73.0
1940	990	68.8
1950	998	64.5

Source: Compiled from Kirke og Undervisningsdepartementet, Innstilling fra Komiteen til å Utrede Samespørsmål, 1959.

APPENDIX C

TABLE I - GRAZING AREA AND REINDEER IN FINNMARK: 1958 AND 1964

Reindeer District	Grazing Period	Reindeer 1958	Reindeer 1964	Area in Sq.Km. ¹	Number of Sq.Km. Used by Reindeer ²	Reindeer Per Sq.Km. 1958	Reindeer Per Sq.Km. 1964
<u>Summer Range</u>							
6 Varangerneset	15/4-15/12	5860	4310	2470	1960	3.1	2.2
7 Raggonjarga	15/4-15/12	3280	3130	1200	1018	3.2	3.1
9 Ytre Corgas	15/4-1/11	2980	2290	360	315	9.4	7.2
10 Vestertana	15/4-15/11	6790	4230	1036	854	3.3	2.1
13 Indre Corgas	1/4-1/11			126	2060		
14 Spiertenjarga	1/4-15/11	5300	4320	1800	1580	3.6	2.6
15 Magerøy	15/4-1/11	2300	2500	312	268	8.6	9.4
16 Porsanger	1/4-15/11	11800	14820	3220	3022	3.8	4.8
19 Sørøy	All year	480	1090	612	528	0.9	2.2
20 Kvaløy	1/5-30/9	1600	1700	247	225	7.1	7.6
21 Geritnjarga	"	2710	2950	330	310	8.7	9.5
22 Fieddar	"	2500	3200	700	635	3.9	5.0
23 Seinos	"	5000	6800	980	790	6.0	8.6
24 Seiland	"	2280	2350	399	358	6.3	6.6
25 Stjernøy	"	1600	1550	224	181	8.8	8.6
26 Laggonjarga	"	5900	5700	460	390	15.0	14.5
27 Joakkonjarga	"	2630	2230	216	166	16.8	13.5
28 Bergsfjord	"	1080	1180	155	125	8.7	9.4
29 Frakfjord	"	890	960	103	83	10.7	11.6
Total Summer Range		64980	65310	17010	14868	4.4	4.4

¹The net area available after subtraction for those parts of the total area unusable.²Remainder occupied by other livestock.

APPENDIX C

TABLE II - GRAZING AREA AND REINDEER IN FINNMARK: 1958 AND 1964

Reindeer District	Grazing Period	Reindeer 1958	Reindeer 1964	Area in Sq.Km. ¹ Individual	Net	Number of Sq. Km. Used by Reindeer ²	Reindeer Per Sq.Km. 1958	1964
<u>Winter Range</u>								
I Polmak								
11 Polmak	1/10-1/5	7600	6770	926	1437	1433	5.3	4.8
12 Levajok	"			511				
II Karasjok								
17	1/9-1/6	34000	32240	2850	5555	5510	6.2	5.8
18	1/11-1/5			2705				
III Kautokeino								
30	15/8-31/5	56000	69070	5805	11175	11130	5.0	6.2
31	1/10-31/5			5370				
1-5 Varanger		10804		4718		4400	-	2.8

¹The net area available after subtraction for those parts of the total area unusable.

²Remainder occupied by other livestock.

Source: E. Lyftingsmo, "Oversyn Over Fjellbeite i Finnmark," Norske Fjellbeite, Vol. XV, 1965, pp. 366-367.

APPENDIX D

A Balance Sheet Showing the Expected Income from a Herd of 200 Reindeer

Total number of reindeer that may reasonably be harvested from a herd of 200 is fifty. On this basis the gross income that may be expected is as follows:

50 animals at 35 kilograms (1kg. = 2.2 lb.) = 1750 Kg.

Sale of 1750 Kg. of reindeer meat at Kr. 5.50.....	Kr. 9625.00
Sale of skins and sundries at Kr. 15.00.....	Kr. 750.00
Yearly Gross Income.....	Kr. 10,375.00
Deduction for Expenses.....	Kr. 1,500.00
Yearly Net Income.....	Kr. 8,875.00

The above calculations are based upon costs for the year 1959 as reported by Skjenneberg in his book Rein og Reindrif.¹ At the time the minimum income sufficient for the support of an average family was Kr. 10,000 or roughly \$1,150, although it was reckoned that a Mountain Lapp family could subsist on somewhat less.

According to the reports of the Lapp sheriffs, the distribution of families according to herd size in 1959 was as follows:

Up to 100 reindeer.....	29% of the families
101-150 reindeer.....	17% of the families
151-200 reindeer.....	12% of the families.

¹ S. Skjenneberg, Rein og Reindrif, A. S. Fjell-Nytt, Lesjaskog, 1965, p. 290.

In all, fifty-eight per cent of the families had less than 200 reindeer or, in other words, over half the Mountain Lapps in Finnmark had less than the absolute minimum required for a livelihood based upon reindeer herding. In view of this, and keeping in mind that 200 animals provided an income below the minimum normally thought necessary for the average family, one can see that, on the average, reindeer herding provides a very low income: a few individual families do very well but the majority get along with a small income.

APPENDIX E

Snow Depth and Number of Days With Snow Cover for Selected Stations in Finnmark, 1960

Station Suolovuobme													
Depth (inches)	J	F	M	A	M	J	J	A	S	O	N	D	Annual Value
	11.8	17.3	16.5	12.5	.78	-	-	-	-	1.5	5.1	12.2	6.4
Days with Snow Cover	31	29	31	23	3	-	-	-	-	25	30	31	<u>Total</u> 203

Station Siččajavrre													
Depth (inches)	J	F	M	A	M	J	J	A	S	O	N	D	Annual Value
	-	16.5	18.0	16.1	-	-	-	-	-	-	4	24	6.5
Days with Snow Cover	-	28	30	22	-	-	-	-	-	-	30	31	<u>Total</u> 141

Station Karasjok													
Depth (inches)	J	F	M	A	M	J	J	A	S	O	N	D	Annual Value
	12.5	16.1	11.8	2.3	-	-	-	-	-	.39	2.3	12.5	4.8
Days with Snow Cover	31	29	31	12	-	-	-	-	-	10	30	31	<u>Total</u> 174

Source: Precipitation Measurements in Norway, Norske Meteorologiske Institutt, Oslo, 1960.

APPENDIX F

TABLE I - THE TOTAL REINDEER IN FINNMARK BELONGING TO
MOUNTAIN LAPPS AND SETTLED LAPPS TOGETHER
WITH THE TOTAL VALUE OF THE HERDS AND
VALUE OF YEARLY HERD PRODUCTION¹

Reindeer Circuit	Number of Reindeer								
	1948	1949	1950	1951	1952	1953	1954	1955	1956
Kautokeino	32,500	33,148	33,500	34,500	40,000	42,200	48,000	50,300	54,000
Karasjok	23,000	20,432	20,700	21,750	24,000	26,000	30,000	30,100	32,500
Polmak	4,000	4,093	4,100	4,200	4,000	5,000	5,000	6,900	7,500
Varanger	5,500	7,015	7,500	8,000	9,000	11,000	11,000	10,200	13,000
Finnmark	65,000	64,693	65,800	68,450	77,000	84,200	94,000	97,500	107,000
Settled Lapps	7,722	9,948	10,100	10,100	14,300	15,500	16,000	15,800	16,450
Mountain Lapps	57,278	54,645	55,700	58,350	62,700	68,700	78,000	81,700	90,550
Value x 1000	13,000	12938.6	13,160	13,690	15,400	16,840	18,800	19,500	21,400
Production x 1000	1,950	1940.79	1,974	2053.5	2,310	2,526	2,820	2,925	3,210
	1957	1958	1959	1960	1961	1962	1963	1964	
Kautokeino	55,350	55,675	59,690	58,534	57,608	58,145	62,813	69,064	
Karasjok	34,170	33,614	28,881	30,965	30,471	30,205	29,181	32,235	
Polmak	8,640	7,695	8,493	7,086	6,729	6,679	6,723	6,771	
Varanger	20,220	17,350	16,912	14,497	12,575	12,278	12,191	10,804	
Finnmark	118,380	114,334	115,976	111,082	107,383	109,269	110,908	118,874	
Settled Lapps	21,310	19,437	-	15,552	-	-	-	-	
Mountain Lapps	97,070	94,897	-	95,530	-	-	-	-	
Value x 1000	23,676	22,542.5	-	22,240	22,800	22,700	22,900	-	
Production x 1000	3557.4	3381.45	-	3,360	3,300	3,400	3,450	-	

¹The value of the herds is reckoned on the basis of Kr. 200 per animal. The production is calculated on the basis of 20 per cent of the total herd at Kr. 150 per animal.

Source: Compiled from the reports of Lapp sheriffs.

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